# THE STRUCTURE

OF THE

# AMERICAN ECONOMY

PART I. BASIC CHARACTERISTICS

JUNE - 1939

NATIONAL RESOURCES COMMITTEE

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# THE STRUCTURE

OF THE

# AMERICAN ECONOMY

## PART I. BASIC CHARACTERISTICS

A REPORT
PREPARED BY THE INDUSTRIAL SECTION
UNDER THE DIRECTION OF
GARDINER C. MEANS

JUNE 1939

NATIONAL RESOURCES COMMITTEE

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NATIONAL RESOURCES COMMITTEE

NORTH INTERIOR BUILDING

WASHINGTON

*June 9, 1939.*

THE PRESIDENT,
*The White House.*

MY DEAR MR. PRESIDENT: We have the honor to transmit herewith a report on "The Structure of the American Economy", prepared under the direction of our Industrial Committee by Dr. Gardiner C. Means and his staff. This document is the first major attempt to show the inter-relation of the economic forces which determine the use of our national resources. It indicates some of the problems which must be faced and solved if we are to have reasonable use of our resources and full employment.

The members of the National Resources Committee wish to indicate their belief in the importance and value of this report as a stimulant to public discussion, and to further efforts for solution of the problems presented.

Sincerely yours,

HAROLD L. ICKES
*Secretary of the Interior, Chairman*

HARRY H. WOODRING
*Secretary of War*

HENRY A. WALLACE
*Secretary of Agriculture*

HARRY L. HOPKINS
*Secretary of Commerce*

FRANCES PERKINS
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This report on the Structure of the American Economy was undertaken as a result of discussions between the Advisory Committee of the National Resources Committee and its Industrial Committee wherein emphasis was given to the need for a broader understanding of the national economy as a functioning whole. Its preparation would have been impossible without the prior work of the countless individuals who have contributed to the growing body of statistical data reflecting contemporary social and economic activity. Acknowledgment and appreciation are due especially to the Bureau of Internal Revenue in the Treasury Department, the Bureaus of Agricultural Economics and of Home Economics in the Department of Agriculture, the Bureaus of the Census and of Foreign and Domestic Commerce in the Department of Commerce, the Bureau of Labor Statistics in the Department of Labor, the Division of Research and Statistics of the Federal Reserve Board, the Research and Statistics Section of the Securities and Exchange Commission, the National Research Project of the Works Progress Administration, the National Bureau of Economic Research, and the Harvard University Committee on Research in the Social Sciences for making available unpublished data and in many cases giving advice as to its significance. In addition to the acknowledgment due to the technical staff who assembled and organized the data and to the contributors to the statistical appendix who filled important statistical gaps, acknowledgment is due to Dr. A. F. Hinrichs and Mr. Louis Bean for serving as alternates to members of the Industrial Committee and for providing valuable criticism, to Dr. Hildegarde Kneeland for criticism of the chapter on the structure of wants, to William R. Muench who supervised most of the statistical computations, and to Charles Faunce, who with the assistance of Norman F. Hampton, was responsible for the drafting of charts.

# PREFACE

Earlier reports of the National Resources Committee and its predecessors have examined the Nation's material resources of land, water, and minerals; the changing character of the population which seeks to utilize these resources; and the improving engineering techniques whereby resources are used to serve human wants. In each of these reports a major aspect of the national household has been sketched in with a greater or less degree of detail in order to give a background for the development of major national policies and to provide a larger frame of reference within which specific problems in specific fields could be more intensively analyzed.

In this report on the Structure of the American Economy an effort is made to bring the major aspects of the national economy into focus so as to emphasize the organic character of the process whereby the Nation's resources are employed to provide useful commodities and services. This emphasis on organization requires that the national community be treated as a single functioning whole and in such a way that every phase of human activity is covered insofar as it involves the use of resources. Only by bringing all the different aspects of the national economy into a single frame of reference can a basis be laid for developing effective policies in respect to particular aspects.

This frame of reference is so broad in scope that it has been necessary to introduce certain limitations in order to keep the report within manageable proportions. The first of these is the concentration of the report on what have been called the structural characteristics of the national economy—those characteristics which show a high degree of continuity—changing only gradually or not at all and giving to the American economy its particular character. The second limitation is introduced by seeking out only what are believed to be the main structural characteristics, especially those which appear to be of major significance for the problem of obtaining more effective use of national resources. A third limitation has developed inadvertently. Certain major structural characteristics are not covered or are only very inadequately covered in the report. On some of these such as the trend of consumer savings, data are so completely lacking that they could not be included. Others were to be included according to the original plans for the report but the investigations necessary to their inclusion were incomplete or inadequate to allow their inclusion without unwarranted delay in publication. The most serious omission of this sort is an analysis of the debt and ownership structure and the structural aspects of interest rates. Such gaps are indicated at the appropriate points in the text. In spite of its shortcomings, the report is presented in the hope that it can give added background for the development of national policies respecting the use resources.

NATIONAL RESOURCES COMMITTEE

NORTH INTERIOR BUILDING

WASHINGTON

*May 18, 1939.*

MR. FREDERIC A. DELANO,
*Chairman, Advisory Committee,*
*National Resources Committee,*
*Washington, D. C.*

DEAR MR. DELANO:

We have the honor to transmit herewith the report on the Structure of the American Economy requested by the Advisory Committee as background to an understanding of the basic national problem of unemployed resources.

The report has been prepared by a staff under the direction of Dr. Gardiner C. Means, who takes primary responsibility for the material presented and its detailed organization.

We wish to emphasize the central importance of insuring reasonably full use of resources. We believe that this report should help to clarify the character of this basic national problem.

Sincerely yours,

THOMAS C. BLAISDELL, JR., *Chairman*

| | | |
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## CONTENTS


| | Page |
|---|---|
| Chapter I.—Introduction | 1 |
| **The Essentials to Economic Activity** | |
| Chapter II. The Structure of Wants | 6 |
| Chapter III.—The Structure of Resources | 22 |
| **The Process of Economic Activity** | |
| Chapter IV.—The Structure of Production—Geographical Structure | 33 |
| Chapter V.—The Structure of Production—Functional | 60 |
| Chapter VI.—The Structure of Production—Financial Overlay | 79 |
| **The Organization of Economic Activity** | |
| Chapter VII.—The Organizational Structure | 96 |
| Chapter VIII.—The Price Structure | 122 |
| Chapter IX.—The Structure of Controls | 153 |
| Chapter X.—Conclusion | 171 |
| **Appendices** | |
| Appendix 1.—A Consideration of the Validity of the Bureau of Labor Statistics Price Indexes | 173 |
| Appendix 2.—Wholesale Price Data | 186 |
| Appendix 3.—Effect of Differentiation Upon Rigidity and Amplitude of Price Movement | 205 |
| Appendix 4.—Public Utility Prices | 207 |
| Appendix 5.—The Relation of Tariffs to the Price Structure | 214 |
| Appendix 6.—Changes in Hourly Earnings, Weekly Hours, and Employment, 1929, 1932–36 | 231 |
| Appendix 7.—Data on Largest Four and Largest Eight Producers in Each Manufacturing Industry, 1935 | 239 |
| Appendix 8.—Summary of Concentration Data, Classification, and Price Data for Manufacturing Industries, 1935 | 264 |
| Appendix 9.—Data on 200 Largest Manufacturing Enterprises, 1935 | 270 |
| Appendix 10.—The 200 Largest Nonfinancial Corporations in 1935 and Their Assets 1929–36 | 273 |
| Appendix 11.—Assets and Income of 200 Largest Nonfinancial and 50 Largest Financial Corporations | 277 |
| Appendix 12.—Interlocking Directorates Among the Largest American Corporations, 1935 | 298 |
| Appendix 13.—Interest Groupings in the American Economy | 306 |
| Appendix 14.—The Role of Labor Organization | 318 |
| Appendix 15.—Productive Activity of Government | 331 |
| Appendix 16.—Maps of Industrial Location, 1935 | 336 |
| Appendix 17.—Quantitative Input and Output Relations in 1929 | 363 |
| Appendix 18.—Supporting Statistics and Methods of Deriving Certain Tables and Charts in the Report | 370 |

# CHAPTER I.—INTRODUCTION

The American economy is the organized activity through which the 130 million people in this country obtain their daily living. Farmers raising food and fiber, miners extracting ore and coal, industrial workers fabricating raw materials into finished products, wholesale and retail distributors making goods available to consumers, and a host of workers performing the other countless tasks required by modern living, all of these are combined in a huge and highly complex producing organization which constitutes the national economy. Through this complex organization the Nation's resources of manpower and materials are used to satisfy human wants.

## The Complexity of Economic Organization

The complexity of this organization is apparent when a single activity such as the provisioning of New York City is examined. It is estimated that in the metropolitan area of New York there is seldom more than 60 days food supply on hand.[1] The meeting of this most basic need of the community requires a tremendously complex organization of farms and farmers, dealers and shippers, truckers and railroads, warehousemen and distributors, telegraph operators and traffic officers, financial institutions and inspection bureaus. To feed New York's 8 million people there is required an organization of manpower and material resources so complex as to be hard to visualize, yet running so smoothly that one is seldom conscious of its complexity or of the fact that it constitutes a single organization of activity, however independent the separate elements in that organization may appear to be. Occasionally a flood, storm or financial panic, or a social or technical break-down in a basic service disrupts this organization and its complexity becomes apparent as mayor or governor or private citizen attempts to readjust the organization of resources to meet the new conditions.

Similarly, for the Nation as a whole, the manpower and material resources are organized in a highly complex, highly interrelated manner. New Yorkers make clothing worn in Dakota; the Dakota wheat farmer supplies California with the materials for bread; transient labor in California picks oranges eaten in Texas; a Texan drills for oil which will operate automobiles in Maine; and a Maine farmer raises potatoes which feed men in New York. It is through such interrelated activity in many areas and many industries that the American community obtains its livelihood.

This highly complex organization, built up over a long period of years with constant readjustment to meet new conditions, is altogether too complex for any individual or small group to grasp in all its ramifications and in every detail. Yet it ties together, into an integral whole, individuals and corporations and governments, each of which performs functions that are necessary if the resources of the Nation are to yield a satisfying standard of living to the national household of 130 million people.

## Failure to Use Resources Effectively

It is inevitable that such a complex organization of human activity should fail to function perfectly. Resources are wasted or used ineffectively as parts of the organization get out of adjustment with each other, or as the organization fails to adjust to new conditions; as individuals fail to find, or are prevented from finding, the most useful field of activity; as material resources are unused, or as their effective use is impeded by human barriers; and as the most effective technology is not used or its use is prevented.

The waste of natural resources through misuse, or ruthless exploitation, is thoroughly familiar. The cutting of forests in a manner which delays or prevents reforestation, the farming of lands by methods which mine the soil of its fertility and encourage soil erosion, the extraction of petroleum by methods which blow into the air billions of cubic feet of natural gas daily,[2] these are specific resource wastes to which attention has already turned and which reflect inadequacies in our organization of resources.

Equally important, but less often thought of as a waste of resources, is the idleness of men and machines that could be productively employed. The power of individuals to produce is a resource like unharnessed water power. It is gone if it is not employed. It cannot be stored. If 10 million men are able and willing to work, but are forced to be idle for a year by lack of jobs, the community has wasted the valuable resources of manpower. And because of idleness, the individuals are likely to suffer a loss of skill and a breakdown of morale. The Nation is poorer both by the goods that could have been produced and by the frustration and loss of morale of the unemployed individual.

Idle machinery may also involve a waste of resources. When machinery is idle and accumulating rust or losing

[1] See appendix 18, p. 370.

[2] *See Report of National Resources Board*, December 1, 1934, p. 406.

usefulness through becoming obsolete, when idle men are available to operate it and when its product would be useful to the community, its idleness is likely to constitute ineffective use of resources.[3] Digging a large building foundation with pick and hand shovel and leaving an available steam shovel idle may not be as wasteful of resources as keeping both men and shovel idle, but it nevertheless involves waste. Waste is also involved when obsolete equipment uses more manpower and materials in doing a particular job than would be required if improved techniques were employed, or when production is divided among so many plants in an industry that no plant can have enough volume to run efficiently. In all of these cases, failure to use the best-known technology consumes manpower or materials that might be released to be used elsewhere.

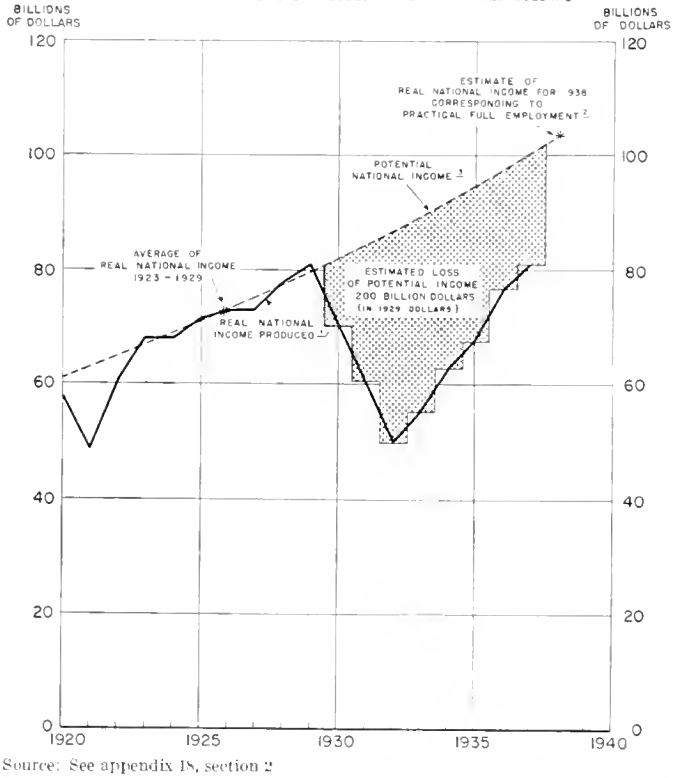
[3] Standby equipment may, of course, be idle without involving waste of resources. Also, it should be noted that if a machine will be as much reduced in usefulness at the end of a year (or any period of time) regardless of whether it is used or left idle, a year's use of the machine is wasted by keeping it idle. Only where the machine will lose usefulness less rapidly by being idle than by being used is the waste from idleness likely to be less than the full use of the machinery. Likewise, when the machine will lose usefulness more rapidly if kept idle than if used, the waste through idleness may be more than the full current use of the machine. It should also be noted that an idle machine may not involve a waste of resources even when idle men are available to operate it and its product would be useful, if a superior machine is also idle or if a sufficiently superior machine could be built.

CHART I

LOSS IN POTENTIAL REAL NATIONAL INCOME DUE TO DEPRESSION UNEMPLOYMENT OF MEN AND MACHINES

1930 - 1937

REAL NATIONAL INCOME IS EXPRESSED IN TERMS OF 1929 DOLLARS




Source: See appendix 18, section 2

[1] Real national income is the national income produced as estimated by the National Bureau of Economic Research and the Department of Commerce, deflated by an index of goods prices computed by the National Bureau and representing both capital and consumer goods prices.

[2] See appendix 18, sec. 2

[3] Derived by connecting the average of real national income, 1923–29, with the estimate of real national income for 1938 corresponding to practical full employment with a compound interest curve. (For the purpose of this chart practical full employment was assumed to involve a residual unemployment of 2 millions.) See Appendix 18, sec. 2

## Magnitude of Wastes

The waste of resources from these three sources, ruthless exploitation, idleness of men and machinery, and failure to use the most effective known technology, all combine to give a tremendous total of wasted resources. How great this waste is it is impossible to estimate, but some suggestion of its magnitude can be given by estimating a single item: the depression loss in income through idleness of men and machines during the last 8 years. Chart I shows the estimated real income of the United States from 1920 to 1937, stated in 1929 dollars. The dashed line gives a crude estimate of what the real income would have been in the years after 1929 if there had been no depression following that year and economic activity had expanded to absorb the increased labor force which became available. This line is obtained by drawing a smooth curve between the point on the chart representing the average real income from 1923 to 1929 and the point representing the estimated real income which would have been produced in 1938 if all but 2 millions of the available labor force had been employed.[4] The shaded area indicates the discrepancy between the national income actually produced from 1929 to 1937, and the income which would have been produced if production had continued to increase at a rate sufficient to absorb the increase in the total labor force. While no calculation can give a precise figure for the depression loss in income due to the idleness of men and machines, the figures do suggest that this loss through nonproduction was in the magnitude of 200 billion dollars worth of goods and services. Most of this represents sheer waste, though to some extent it reflects a smaller depletion of natural resources.

The significance of this figure of 200 billion dollars is hard to grasp, but some idea can be obtained by considering what 200 billion dollars would mean in terms of concrete goods. If all the idle men and machines could have been employed in making houses,

[4] Based on an estimate made in *Patterns of Resource Use*, National Resources Committee, 1938. See appendix 18, p. 371.

The annual rate of growth in potential national income indicated above is approximately 3 percent a year, whereas the rate maintained fairly uniformly from 1880 to 1930, as shown in chapter V, chart I, was approximately 3.5 percent a year. The latter figure is consistent with the rates found in other studies. E. E. Day and W. P. Persons estimated the annual rate of growth in total national production from 1870 to 1930 at 3.7 percent. G. F. Warren and F. A. Pearson estimated the same annual rate of growth for the same period. Arthur F. Burns, furthermore, finds no evidence of a significant retardation in the rate of growth from 1870 to 1930. (See A. F. Burns, *Production Trends in the United States Since 1870*, N. Y., pp. 263, 280). This makes 3 percent per year since 1930 reasonably conservative.

the extra income would have been enough to provide a new $6,000 house for every family in the country. If instead, the lost income had been used to build railroads, the entire railroad system of the country could have been scrapped and rebuilt at least five times over. Of such is the magnitude of the depression loss in income through failure to use available resources. It meant a lower standard of living for practically every group in the community.

Even in the nondepression years there was extensive idleness of men and machines which could have been used had there been adequate organization. The Brookings Institution has estimated that in the peak year 1929 both production and national income could have been increased 19 percent by merely putting to work the men and machines that were idle in that year even without the introduction of improved techniques of production.[5] While it is not possible to establish such a figure with perfect accuracy, its magnitude suggests a very real waste of resources.

Wastes through the failure to use the best techniques of production and through faulty exploitation of natural resources likewise contribute their quota to the total waste. Few have attempted to make estimates in this highly uncertain field, but there can be little question of the magnitude of resource waste through using less than the best techniques and through faulty use of natural resources.

### The Impact of Waste

The full meaning of this failure to use resources effectively can only be realized by considering its impact upon individuals. Practically every individual in the community suffers as a result of these wastes. When the national income is 60 billion instead of 90 billion dollars, the worker suffers a lower income through unemployment or partial employment or through wage rates lower than resources make possible; the farmer receives a lower income because of a reduced home market; the return on capital is reduced as a result of the partial use of equipment and the resulting increase in unit costs. For each group in the community this waste of resources means a lower standard of living than would clearly be possible.

Even more basically significant is the individual frustration resulting from the inability to find an effective use for one's skills. Without the satisfaction of useful activity, without the sense of security in a job well done, most men lose some of their self-reliance and some of their ability to be productive.

Moreover, as people become increasingly aware of the discrepancy between rich resources and poor results in living and as the ineffectiveness in the organization of resources becomes more clear, a sense of social frustration must develop and be reflected in justified social unrest and unavoidable friction. Individual frustration builds into social frustration. And social frustration is quite as likely to work itself out in socially destructive as in socially constructive ways.

[5] *America's Capacity to Produce*, Brookings Institution, p. 422.

### The Opportunity

At the same time this waste of resources presents a tremendous opportunity. Such resources hold the promise of a much higher standard of living than is now being obtained and present a challenge to this country, as a national household, to work out their effective use. It is a surprising comment on a Nation that prides itself on its skill in organization, in administration, and in management that such tremendous waste of resources can occur. The abundance of natural resources and the continental pioneering that has been necessary for their development may in part account for the past waste. With the continent spanned, the frontier shifts from the bringing of new resources into control to the more effective use of the resources already controlled. Here is the great challenge of today.

How long this opportunity will be open to the American democracy involves a serious question. The opportunity for a higher standard of living is so great, the social frustration from the failure to obtain it is so real, that other means will undoubtedly be sought if a democratic solution is not worked out. The time for finding such a solution is not unlimited.

### Stating the Problem

This problem, the basic problem facing economic statesmanship today, can be stated as follows: How can we get effective use of our resources, yet, at the same time preserve the underlying values in our tradition of liberty and democracy? How can we employ our unemployed, how can we use our plant and equipment to the full, how can we take advantage of the best modern technology, yet in all this make the individual the source of value and individual fulfillment in society the basic objective? How can we obtain effective organization of resources yet at the same time retain the maximum freedom of individual action? This is a problem so large that no solution is likely to be arrived at except over a period of years and through the efforts of many people.

### Nature of this Report

This report attempts to delineate the essential structural characteristics of the American economy. Its aim is to clarify the problem of achieving effective use of resources, not to offer any solution. It seeks to provide a background for attempts at solution and to call

attention to certain implications of the structure of the economy in a direction which efforts at solution might take.

Knowledge of structure becomes imperative when any organization or machine fails to run properly. The characteristics of any machine can be roughly grouped into its structural characteristics and its operating characteristics. So long as a machine runs well, its operating characteristics are all important, and its structure can be largely taken for granted. In order to drive an automobile it is enough to know how to manipulate the operating controls such as the starter, throttle, clutch, steering wheel, and brake. But when the machine fails to operate properly a knowledge of its essential structure is necessary in order to make the appropriate adjustments.

So also with the national economy; as long as it runs reasonably well, a knowledge of its structure is of secondary importance. Individuals, enterprises, and governments can continue to adopt the operating policies that have been found to work successfully in the past. But when it fails to run well, knowledge of its structure becomes of vital importance. Only as both its structure and the operating policies being adopted are clearly understood can faulty functioning be corrected.

Yet to talk of the characteristics of the national economy in terms of an analogy to a machine is to lose sight of the dynamic characteristics of both the economic structure and the multitude of separate decisions which together make up operating policy. The economic structure is constantly changing, sometimes gradually as consumer wants gradually shift or as new inventions are gradually developed and put into use, and, like the automobile or radio, call for new production arrangements; sometimes rapidly as a wave of mergers rapidly alters the industrial scene or as a new impetus is given to labor organization by a shift in public policy. Likewise operating policies are subject to constant modification as new conditions and opportunities develop. Both structure and operating policies interact on each other and each to some extent conditions the other. Often they cannot be clearly separated from each other. Yet their separation is important because, as a result of their dynamic character, they can develop in such a way that the operating policies and the structure are not compatible with each other. Just as the operating policies which are effective with a horse and buggy are not effective when the latter is replaced by the automobile, so the operating policies appropriate to one economic structure may not be effective when that structure has become significantly altered. The faulty functioning of the American economy necessarily raises the question of whether the present operating policies and the present economic structure are compatible with each other. A clear delineation of the essential structure of the American economy is a first step toward answering this question.

Such an analysis of the economic structure is not only made necessary by the depression in economic activity which followed 1929 but is greatly aided by that depression. The rapid drop in national production from a value of over 80 billion in 1929 to under 50 billion [6] 3 years later, and the very considerable recovery since that time, give the economic analyst what is almost equivalent to a laboratory experiment on the basis of which many structural characteristics may be observed. The violence of the change, and the fact that production was almost as high at the end as at the beginning of the period, make certain structural characteristics stand out, just as a high wind brings out the structural difference not evident on a windless day between the tree that bends to the wind and that which stands unbending. Without the data of the depression years it would be much more difficult to recognize the structural characteristics of the national economy.

In order to be effective, an analysis of the economic structure must treat the American economy as an integral whole—as a going concern. To treat only certain activities is to lose the essential unity of all the separate and interrelated activities which make up the whole. Yet the American economy in all its structural aspects involves such a complex and ever-changing system of relationships that it could not be set forth in detail in a single report, however extensive that report might be. The most that can be done in treating the structure of the American economy in a single report is to set forth the structure only in its broadest outlines, emphasizing those elements of structure which appear most significant to the effective functioning of the whole economy.

Even when approached in the broadest terms, reliable data with which to block in the economic structure are missing at many points. Because completeness of the outline has seemed more important than a high degree of precision, crude estimates such as that for the total national wealth sometimes have been used where they are derived from the best data available. In such cases the reader has been warned of their crudity. At a few points even the basis for making crude estimates is lacking and a significant gap appears in the outline of the structure. The lack of adequate data means that at many points the outline of the economic structure in this report is only approximate, leaving to future analysis the task of bringing greater precision.

In this report the structure of the American economy will be examined under three main heads. First, the economic bases for production will be considered—the wants calling for satisfaction and the resources available

[6] Both expressed in 1929 dollars.

for use in filling wants. Second, the structure of production through which resources are used to fill wants will be discussed in its geographical, its functional, and its financial aspects. Third, the influences which give organization to the activity of the millions of separate individuals composing the American economy will be considered with particular emphasis on the market mechanism and administration.

For purposes of presentation it is necessary to make some such break-down as this. It should be remembered, however, that the structure of the economy is a single entity. Each chapter involves an examination of one *aspect* of this whole rather than a *part* of the whole. The report is not made up of a series of pieces which fit together like a puzzle but of a series of *different points of view* from which to consider one thing, the structure of the economy. In spite of a certain amount of inevitable repetition, this is the only way in which it is possible to view the structure of the whole economy as a going concern.

# CHAPTER II.—THE STRUCTURE OF WANTS

Basic to the structure of the American economy are the wants of consumers. Food, clothing, shelter, education, transportation, and a host of other items are sought by consumers. To the extent that consumers have the power to make their wants effective, these wants are reflected in economic activity. The character and proportioning of these wants influences production and contributes to the structure of the whole economy.

## Consumer Wants

The main characteristics of consumer wants are reflected in the way consumers apportion their expenditures. If consumers have the same amount of money to spend at one time as at another, but spend more on automobiles and less on food and shelter, this may reflect a shift in consumer wants. When consumers have less to spend the items which they forego are presumably those which they want less strongly. Thus, by examining the pattern of consumer expenditure in the past and the consumption from year to year of certain types of goods it is possible to discover the outline of what might be called the "structure of wants."

The pattern of consumer wants is not, of course, fixed and immutable, but is continually changing under the impact of fashion, advertising, education and new goods coming into use. Within limited periods of time, however, changes in the pattern of wants are largely changes in detail, not in the basic structure of wants as they relate to major categories of activity.

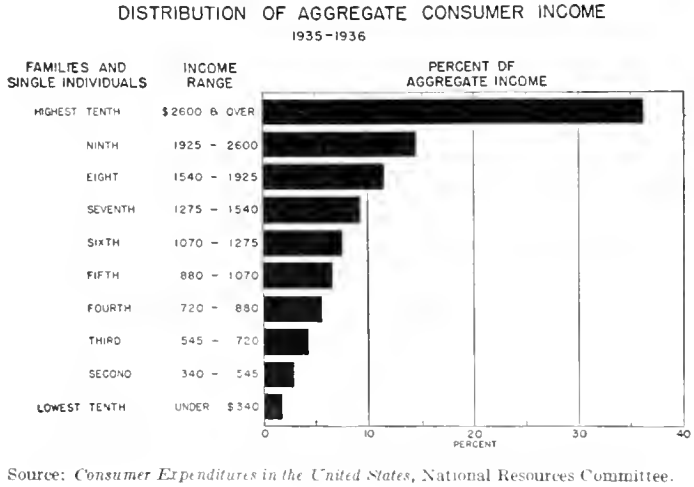
While consumer expenditure is the most important channel through which consumer wants influence production, it is not the only one, and some account must be taken of the wants reflected through other channels. The three most important cases of this sort occur in (1) production at home for home use, (2) Government services supplied without any direct charge but financed for the most part out of taxes and (3) group expenditure by consumers combined in such bodies as churches, hospitals, and similar consumer institutions. By placing money values on food raised for home consumption and on shelter obtained from owned homes, these, the two most important items of home production, can be combined with purchased goods in analyzing consumer wants. The services rendered free by Government and by consumer institutions cannot be converted into the equivalent of private expenditure and can best be treated as reflecting wants which are met through social expenditure. These social expenditures are relatively small in comparison with all expenditures, so that the main elements of the structure of wants are to be found in the analysis of private expenditures.

All consumers are, of course, not equally able to express their wants in the market. Significant differences between different groups of consumers can be brought out in two related maps. Map 1 shows the distribution of all consumers, regardless of their ability to make their wants effective. In map 2 these same consumers are weighted by their purchasing power—by their ability to express their wants in terms which affect the direction of economic activity. From this map it will be seen that urban consumers are on the whole more economically articulate than rural ones[1] and in particular that the wants of consumers living in the northeast section of the country and on the west coast are more effectively expressed in purchasing power than are the wants of consumers in some parts of the South.

The distribution of the total consumer income in 1935–36 is shown by tenths in chart I, from the highest tenth with incomes of $2,600 and over a year, to the lowest tenth with incomes under $340. Obviously, the wants of consumers at the upper income levels can be more effectively expressed than the wants of those at the lower level.

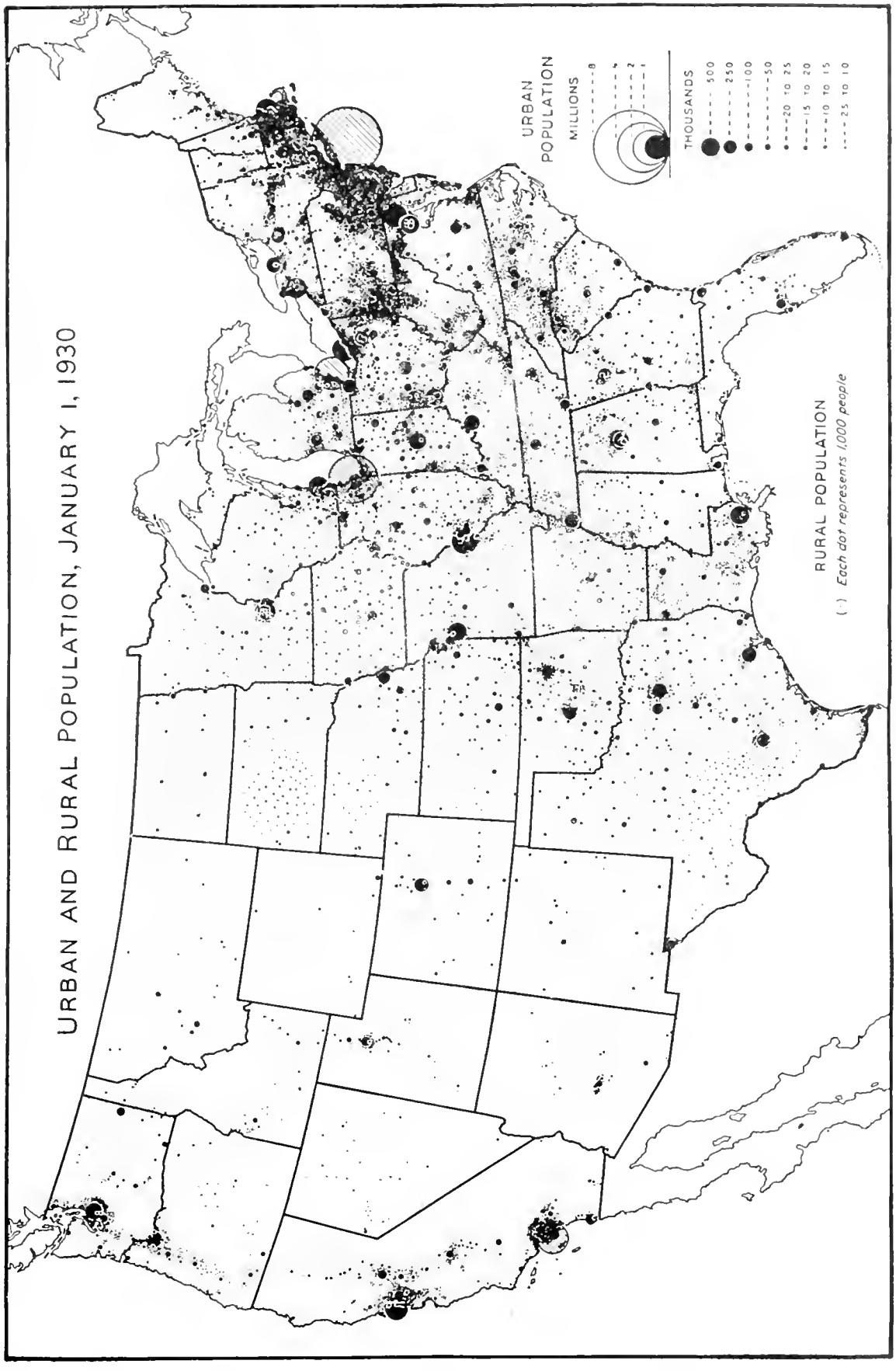
The actual expenditures which direct production, however, reflect primarily the wants of families and individuals with relatively small incomes. In chart II,

CHART I

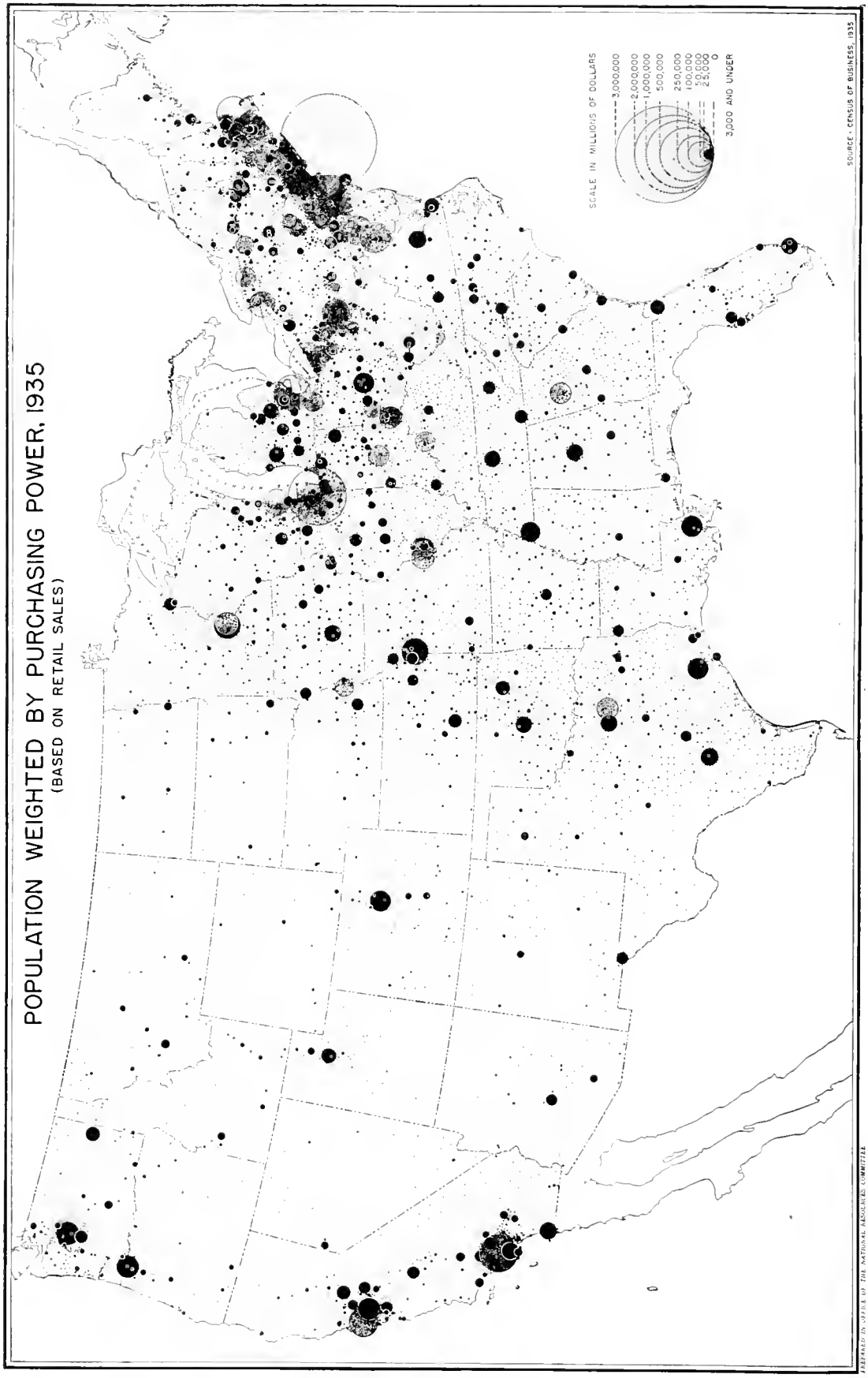



Source: *Consumer Expenditures in the United States*, National Resources Committee.

[1] The map exaggerates this difference by showing as urban the purchases made by rural people in neighboring cities.




MAP 1. Distribution of Population, United States, 1930




MAP 2.—Population Weighted by Purchasing Power, 1935

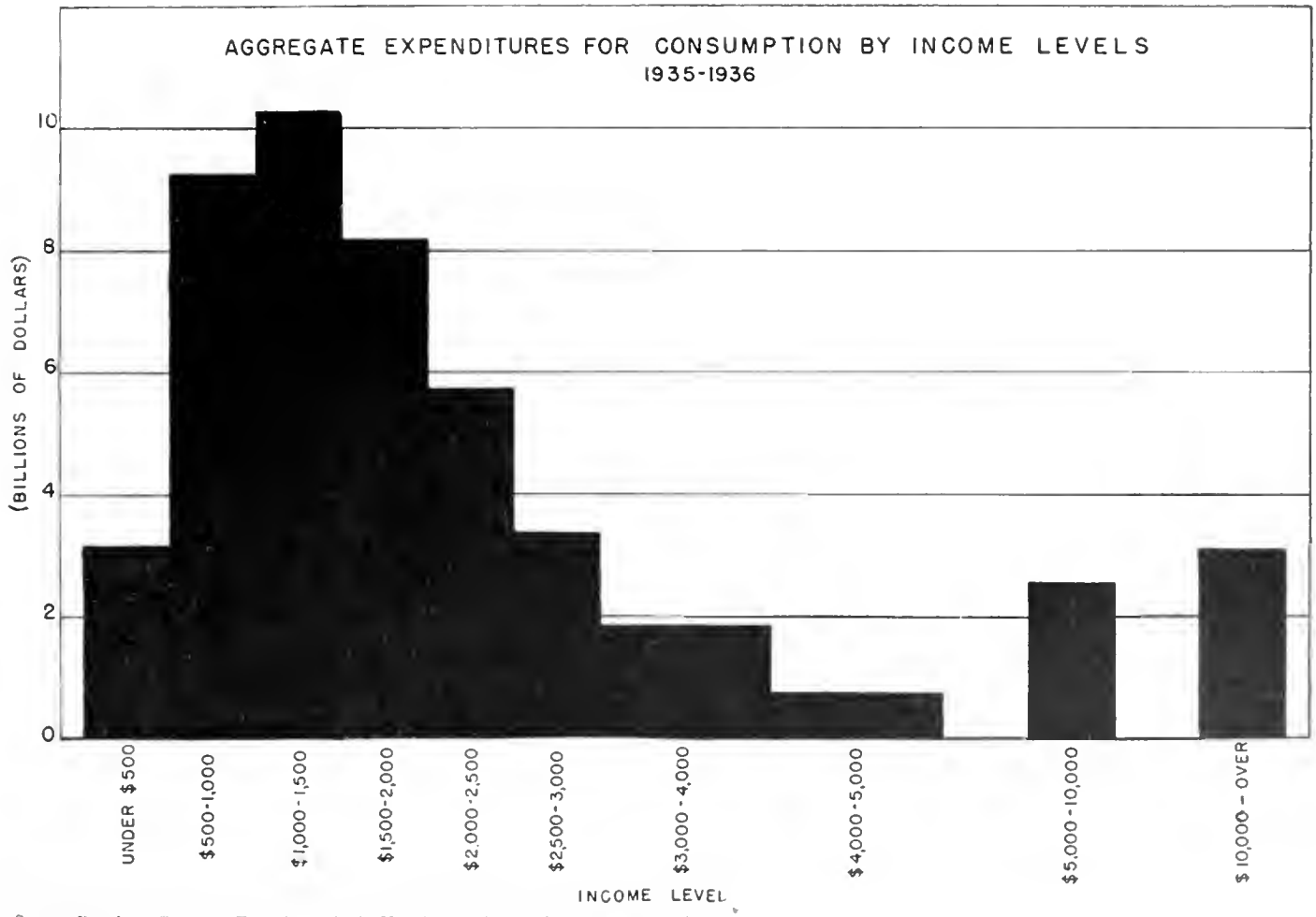
the aggregate expenditure for consumption by consumers at each income level is shown.[2] More than half of the total expenditure, including home produced food and rental value of owned homes, was made by families and individuals having incomes between $500 and $2,000, and over 85 percent was made by consumers with incomes under $4,000 a year. Only 6 percent of the total consumer expenditure was derived from incomes over $10,000. Thus, in considering the structure of wants as reflected in actual expenditure, it must be kept in mind that one is dealing primarily with wants as they are made effective out of relatively small incomes.

The reason why small-income consumers dominate the pattern of expenditure is partly to be seen in chart I, which shows that nearly two-thirds of the total consumer income went to the receivers of incomes under $2,600, who made up nine-tenths of all consumers. It is partly to be seen in chart III, which indicates the proportion of incomes that are saved at different levels. Consumers with incomes of $1,500 spent very nearly all of their income, and those below $1,250 spent, on the average, more than their total income. On the other hand, consumers with larger incomes saved a very substantial proportion, amounting to approximately 30 percent of the 5 to 10 thousand dollar incomes. Above the $10,000 level, the proportion saved increases markedly.

This tendency to save a larger proportion of income at the higher income levels is of major significance for the structure of the American economy. It will be discussed in some detail in chapter VI, along with the factors which make for a larger or smaller volume of total expenditures on consumption. In this chapter discussion will be focused on the structure of wants as they are reflected in expenditures on consumption. The

[2] These data and the data in the following section are all expressed in 1935-36 dollars. They were drawn from the report of the National Resources Committee, *Consumer Expenditures in the United States*. The estimates apply to the 12-month period from July 1935 through June 1936. They were based primarily on the data from the Study of Consumer Purchases, a Works Progress Administration project, conducted by the United States Bureau of Home Economics and the United States Bureau of Labor Statistics in cooperation with the National Resources Committee and the Central Statistical Board.

CHART II




Source: Based on *Consumer Expenditures in the United States*, National Resources Committee.

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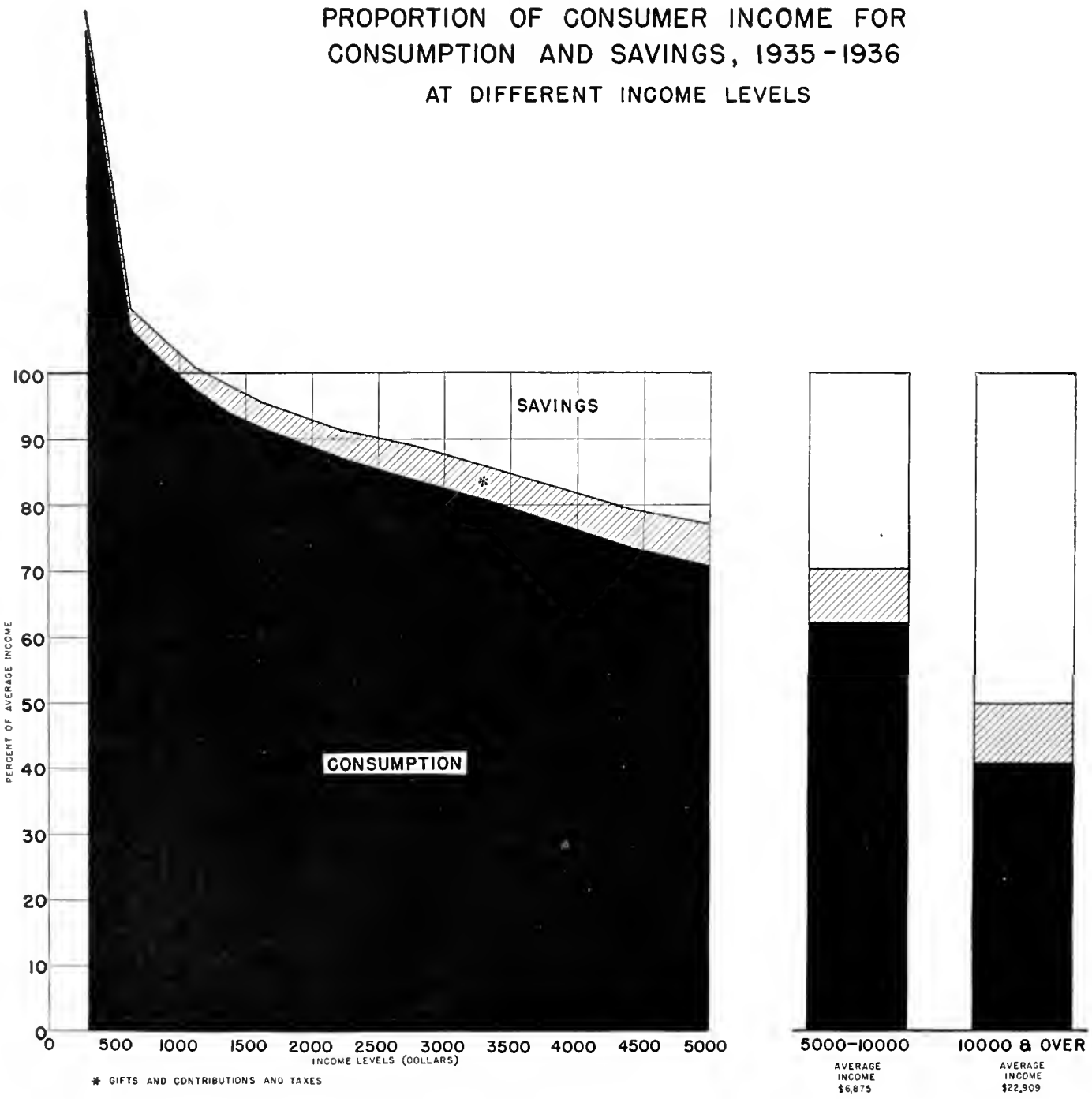
size and distribution of consumer income enter only incidentally as they appear to influence the direction of consumer expenditure.

### Major Items of Consumer Expenditure

In delineating the structure of wants as reflected in consumer expenditure, there are several main aspects which require attention. (1) What is the relative importance of wants? (2) How does the direction of expenditures differ for individuals and families at different income levels? (3) How does the distribution of income affect the direction of expenditure? (4) What is the influence on the direction of expenditures of (a) the level of total national expenditure, and (b) a change in the level? (5) How do price relationships affect the direction of expenditure? And, (6) what are

CHART III




Source: Based on *Consumer Expenditures in the United States*, National Resources Committee.

the trends of change in the direction of expenditures reflecting changes in wants through time? If each of these aspects of the structure of wants could be set forth, they would provide a fairly clear indication of what the national economy would probably be called on to produce under different possible conditions.[3]

The total consumer expenditure of American families and individuals in 1935–36 was approximately 50 billion dollars.[4] The proportioning of this expenditure among the major types of expenditure is indicated in chart IV. Outstanding in the structure of wants as reflected in the relative expenditure is the dominant role played by the basic essentials, food, clothing, and housing. These three items together accounted for 63 percent of the total of consumer expenditure. Operation and upkeep of the home (light, fuel, furniture, and similar items) and automobile expenditure account for another 21 percent, leaving only 16 percent to go for private expenditure on medical and personal care, education and reading, recreation, and other items.

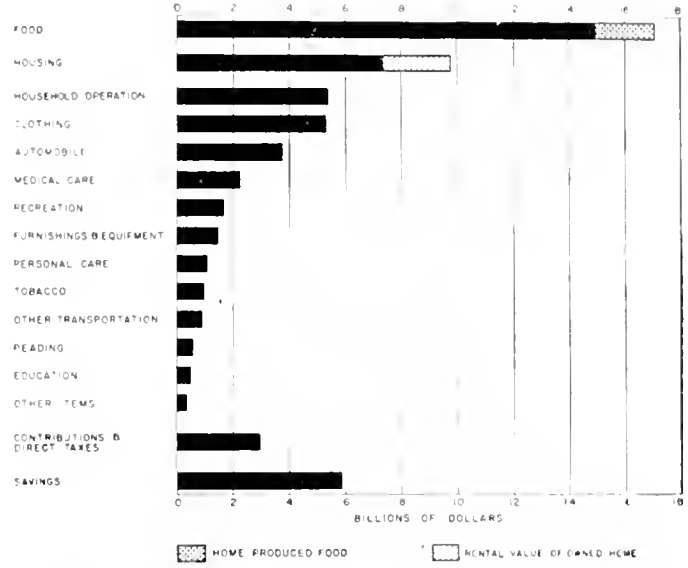
A significant light can be thrown on the structure of wants by comparing the way money expended on consumption is apportioned among items by consumers with different levels of income. Chart V shows the average amount spent in 1935–36 by consumers in each income group on each major item of expenditure, while chart VI shows the proportionate distribution of these average expenditures among major items. The latter chart indicates that at higher incomes a much smaller proportion of consumer expenditure goes into food and a larger proportion into clothing, automobiles, and education, while about the same proportion goes into housing, household equipment, personal and medical care, reading, and other items, no matter what the level of income. More detailed figures show some increase in proportionate expenditure for household operation and recreation, and some decrease in that for tobacco. One item, transportation other than automobile, shows little change in the proportion of expenditure devoted to it except for the group with incomes over $10,000 where the proportion increases, presumably reflecting greater expenditure on travel.

The difference in the way money is spent at different levels of income is strikingly shown in table I which compares the allocation of the expenditure of a million dollars if spent by 1,414 families having incomes between $500 and $750 with the allocation of the same amount by 145 families falling into the $5,000 to $10,000 income group.[5] These figures clearly indicate the shift in the emphasis of expenditure as the power to spend is expanded.

CHART IV

EXPENDITURES OF AMERICAN CONSUMERS

1935–1936




Source: Based on *Consumer Expenditures in the United States*, National Resources Committee.

The changes here shown in the relative emphasis on particular wants as the power to satisfy wants is expanded gives one dimension to the structure of wants. As more detailed information becomes available from the study of consumer expenditures it will be possible to indicate the influence of buying power on different items within those large categories. From these data, for instance, it will be possible to measure the lesser importance of bread, cornpone, and potatoes in the

TABLE I. *Effect of size of income on direction of expenditure — Comparison of expenditure of 1 million dollars by consumers at 2 different levels of income*

| | If spent by 1,414 consumers with $500–$750 income | If spent by 145 consumers with $5,000–$10,000 income | Absolute difference | Percentage difference |
|---|---|---|---|---|
| Food | $438,000 | $233,000 | −$205,000 | −47 |
| Tobacco | 20,000 | 14,000 | −6,000 | −30 |
| Housing | 177,000 | 176,000 | −1,000 | −0.6 |
| Personal care | 20,000 | 20,000 | 0 | 0 |
| Reading | 8,000 | 9,000 | +1,000 | +12 |
| Other items | 7,000 | 8,000 | +1,000 | +14 |
| Transportation, other than automobile | 7,000 | 11,000 | +4,000 | +57 |
| Household operation | 120,000 | 131,000 | +11,000 | +9 |
| Furniture and equipment | 23,000 | 35,000 | +12,000 | +52 |
| Medical care | 41,000 | 56,000 | +15,000 | +36 |
| School supplies and private education | 4,000 | 19,000 | +15,000 | +375 |
| Recreation | 16,000 | 46,000 | +30,000 | +188 |
| Clothing | 79,000 | 125,000 | +46,000 | +58 |
| Automobile | 40,000 | 117,000 | +77,000 | +192 |
| Total | 1,000,000 | 1,000,000 | | |

Source: Based on *Consumer Expenditures in the United States*, National Resources Committee

[3] See *Consumer Expenditures in the United States*, National Resources Committee, for detailed discussion of certain aspects of the structure of wants in addition to those here enumerated, including the effect on the structure of wants of family size, degree of urbanization, and geographical location.

[4] Of this 50 billion dollars, 4½ billion, or 9 percent, represented the value of home-produced food and the rental value of owned homes.

[5] The extreme categories, under $500 and over $10,000, are not used in this comparison because the figures are believed to be less reliable than those for the less extreme categories.

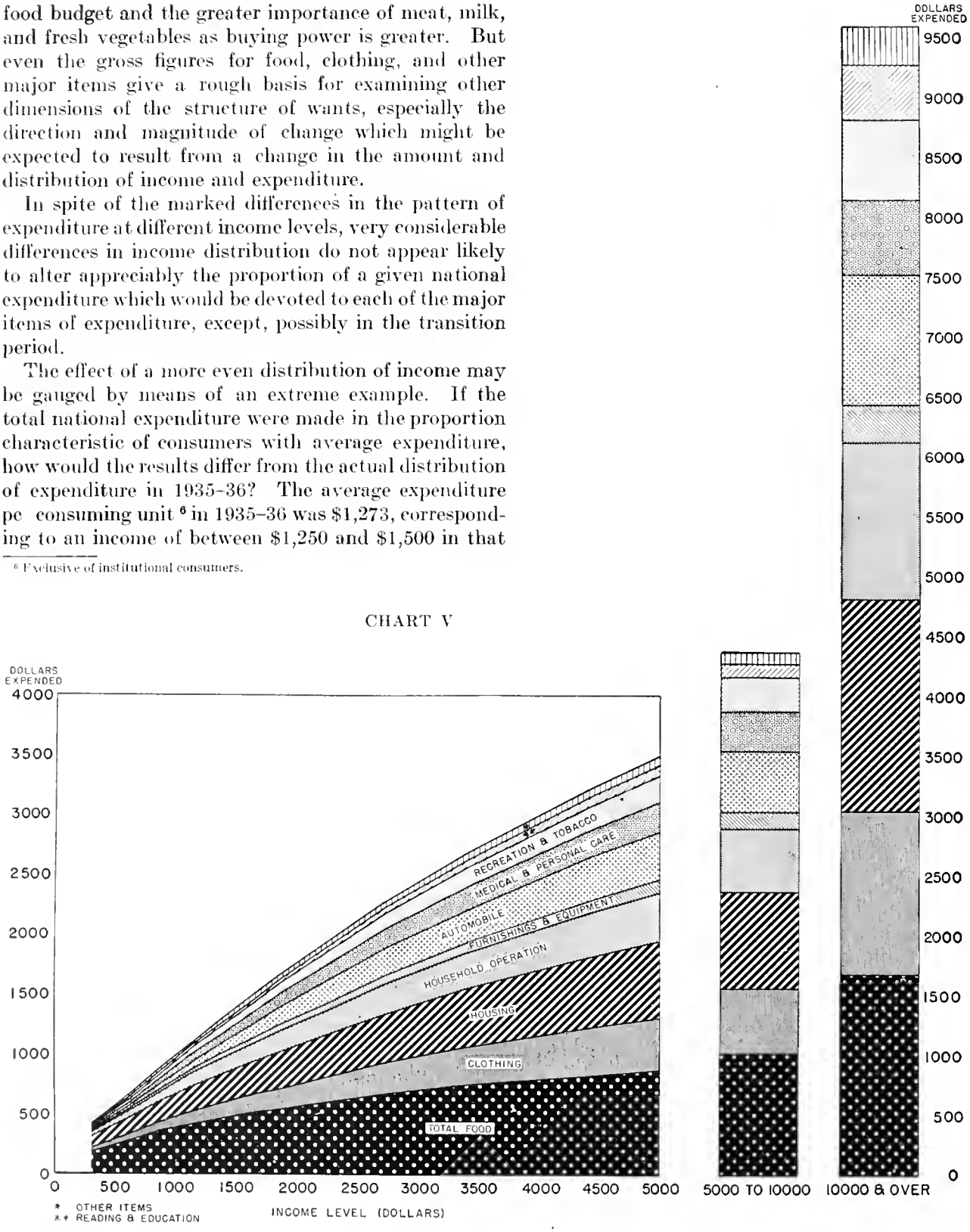
food budget and the greater importance of meat, milk, and fresh vegetables as buying power is greater. But even the gross figures for food, clothing, and other major items give a rough basis for examining other dimensions of the structure of wants, especially the direction and magnitude of change which might be expected to result from a change in the amount and distribution of income and expenditure.

In spite of the marked differences in the pattern of expenditure at different income levels, very considerable differences in income distribution do not appear likely to alter appreciably the proportion of a given national expenditure which would be devoted to each of the major items of expenditure, except, possibly in the transition period.

The effect of a more even distribution of income may be gauged by means of an extreme example. If the total national expenditure were made in the proportion characteristic of consumers with average expenditure, how would the results differ from the actual distribution of expenditure in 1935–36? The average expenditure pe consuming unit [6] in 1935–36 was $1,273, corresponding to an income of between $1,250 and $1,500 in that

[6] Exclusive of institutional consumers.

CHART V




AVERAGE EXPENDITURES FOR CONSUMPTION AT DIFFERENT INCOME LEVELS 1935-1936

Source. Based on *Consumer Expenditures in the United States*, National Resources Committee

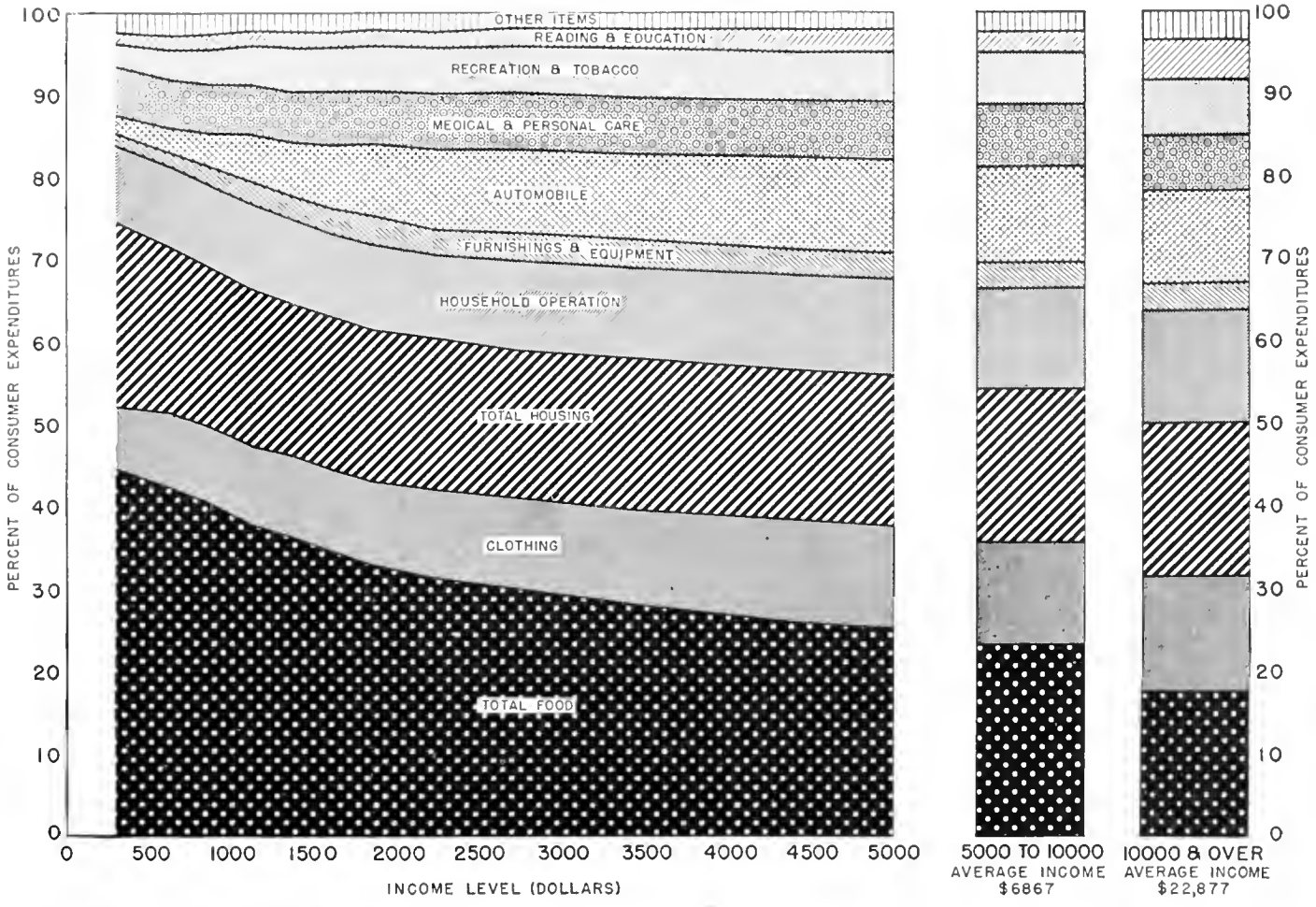
year.[7] If consumer income had been so evenly distributed that the whole of the 50 billion dollars spent on consumption in 1935–36 had been spent by families or individuals with incomes in this range, and if their expenditure followed the same proportions as the expenditure actually made by such families, the expenditure on the major items would have been that given in table II. The expenditure of all families and individuals in 1935–36 is also given for comparison.

Although the figures in table II are based on the extreme assumption of an equal distribution of income compared with the unequal distribution existing in 1935–36, the differences in the direction of expenditure are not of great magnitude. The largest absolute difference in expenditure shown is that for food, 1,363 million dollars or 8.1 percent more being spent on food with an equal distribution of income than with the unequal distribution of 1935–36. The largest percentage increase is that of tobacco, showing 19.5 percent more spent on tobacco with equal distribution though involving an absolute increase of only 189 million dollars. Since any difference in income distribution arising in the near future is likely to be very much smaller than that assumed above, the differences shown are very much greater than any likely to arise from differences in income distribution. Thus, while the structure of the wants of individuals is such that greater buying power brings marked shifts in proportionate expenditure, a shift in income distribution of the magnitude likely to occur in practice would not bring a significant shift in the proportioning of expenditure among the major categories of goods, provided the same total amount was expended. The

[7] The average expenditure for the $1,250–$1,500 income group was $1,285. The average income of all consumers was $1,502. The average expenditure corresponds to a less than average income, owing to the greater proportion saved at higher income levels.

CHART VI

PROPORTIONATE DISTRIBUTION OF AVERAGE EXPENDITURES FOR CONSUMPTION AT DIFFERENT INCOME LEVELS 1935-1936




Source: Based on *Consumer Expenditures in the United States*, National Resources Committee.

TABLE II.—*Effect of income distribution on direction of expenditure.—Distribution of national expenditure of 50 billion dollars as spent in 1935–36, and as it would be spent with equal distribution of income*

| | Unequal distribution of income—estimated expenditure in 1935–36 (millions of dollars) | Equal distribution of income—calculated expenditure if all income were between $1,250 and $1,500 [1] (millions of dollars) | Absolute difference (millions of dollars) | Percentage difference |
|---|---|---|---|---|
| Tobacco | 966 | 1,155 | +189 | +19.5 |
| Reading | 551 | 603 | +52 | +9.4 |
| Food | 16,865 | 18,228 | +1,363 | +8.1 |
| Furnishings and equipment | 1,422 | 1,456 | +34 | +2.4 |
| Personal care | 1,032 | 1,054 | +22 | +2.1 |
| Other items | 307 | 301 | −6 | −2.0 |
| Housing | 9,506 | 9,239 | −267 | −2.8 |
| Household operation | 5,285 | 5,122 | −163 | −3.1 |
| Transportation, other than automobile | 884 | 854 | −30 | −3.4 |
| Clothing | 5,261 | 5,021 | −240 | −4.6 |
| Medical care | 2,205 | 2,059 | −146 | −6.6 |
| Recreation | 1,643 | 1,506 | −137 | −8.3 |
| Automobile expense | 3,781 | 3,264 | −517 | −13.6 |
| Private education | 506 | 352 | −154 | −30.4 |
| Total expenditure | 50,214 | 50,214 | | |
| Corresponding consumer income | 59,259 | 53,400 | | |

Source: Based on National Resources Committee report, *Consumer Expenditures in the United States.*

[1] The distribution of expenditures is based upon the percentage distribution of the average expenditures of families and single individuals in the $1,250 to $1,500 income group. The average expenditure for this group was $1,285 compared with an average expenditure for all groups of $1,273.

greatest significance of differences in income distribution for the structure of wants lies in the proportion of consumer incomes which is saved, and possibly also in the more detailed categories of consumption on which data are not yet available.

Differences in patterns of expenditure of greater practical significance appear to grow out of variations in the total amount expended on consumption. In practice, variations in total expenditure are accompanied by changes in price relationships and by influences growing out of the transition from one level to another. The data on consumer expenditure at different income levels make it possible to calculate differences in total expenditure that could be expected to arise solely from differences in level of expenditure apart from the factors of price change and transition. With a higher level of total consumer expenditure, a larger expenditure in each major category could be expected, but each branch of expenditure would not be likely to be greater in the same degree. A rough indication of the direction and magnitude of change can be obtained by a recombination of the data on expenditures at each level of income to indicate the way different total expenditures would be divided between different items. Thus, it is possible to calculate how a total expenditure corresponding to a national income of 40, 60, or 80 billion dollars would have been spent if consumer income had been distributed in exactly the same proportion as in 1935–36 and if price relationships had remained unchanged, but each income group had received a different income and had adopted the expenditure patterns of the corresponding income group. Such a calculation does not take into account any of the changes in expenditure resulting from the transition from one level to another but only reflects the differences in expenditure at the different levels after adjustment had been made to the new level. The patterns of expenditure calculated on this basis for an expenditure of 38 billion dollars, corresponding to a consumer income of 40 billion dollars, for 51 billion dollars corresponding to a consumer income of 60 billion dollars, and also for 63 billion dollars, corresponding to a consumer income of 80 billion dollars, are given in table III,

TABLE III.—*Effect of level of consumer expenditures on the direction of expenditures*

| | Expenditure of $37,869 million corresponding with $40 billion income (millions of dollars) | Expenditure of $50,784 million corresponding with $60 billion income (millions of dollars) | Expenditure of $63,494 million corresponding with $80 billion income (millions of dollars) | Absolute difference (millions of dollars) | | | Percentage difference | | | Percent distribution of expenditures | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | $40 to $60 billion income | $60 to $80 billion income | $40 to $80 billion income | $40 to $60 billion income | $60 to $80 billion income | $40 to $80 billion income | $37,869 million | $50,784 million | $63,494 million |
| Food | 13,771 | 17,013 | 19,874 | 3,242 | 2,861 | 6,103 | 23.5 | 16.8 | 44.3 | 36.3 | 33.5 | 31.3 |
| Housing | 7,560 | 9,597 | 11,876 | 2,037 | 2,279 | 4,316 | 26.9 | 23.7 | 57.1 | 19.9 | 18.7 | 18.7 |
| Transportation, other than automobiles | 672 | 888 | 1,079 | 216 | 191 | 407 | 32.1 | 21.5 | 60.6 | 1.8 | 1.7 | 1.7 |
| Personal care | 778 | 1,044 | 1,289 | 266 | 245 | 511 | 34.2 | 23.5 | 65.7 | 2.1 | 2.1 | 2.0 |
| Reading | 405 | 555 | 675 | 150 | 120 | 270 | 37.0 | 21.6 | 66.7 | 1.1 | 1.1 | 1.1 |
| Tobacco | 713 | 982 | 1,189 | 269 | 270 | 476 | 37.7 | 21.1 | 66.8 | 1.9 | 1.9 | 1.9 |
| Household operation | 3,936 | 5,355 | 6,822 | 1,419 | 1,467 | 2,886 | 36.1 | 27.4 | 73.3 | 10.4 | 10.5 | 10.8 |
| Other items | 225 | 307 | 402 | 82 | 95 | 177 | 36.4 | 30.9 | 78.7 | .6 | .6 | .6 |
| Clothing | 3,696 | 5,327 | 6,949 | 1,631 | 1,622 | 3,253 | 44.1 | 30.4 | 88.0 | 9.8 | 10.5 | 10.9 |
| Medical care | 1,552 | 2,242 | 2,919 | 690 | 677 | 1,367 | 44.5 | 30.2 | 88.1 | 4.1 | 4.4 | 4.6 |
| Furnishings | 945 | 1,447 | 1,916 | 502 | 469 | 971 | 53.1 | 32.4 | 102.8 | 2.5 | 2.8 | 3.0 |
| Recreation | 1,041 | 1,668 | 2,311 | 627 | 643 | 1,270 | 60.2 | 38.5 | 122.0 | 2.7 | 3.3 | 3.6 |
| Education | 319 | 512 | 746 | 193 | 234 | 427 | 60.5 | 45.7 | 133.8 | .8 | 1.0 | 1.2 |
| Automobiles | 2,256 | 3,847 | 5,447 | 1,591 | 1,600 | 3,191 | 70.5 | 41.6 | 141.4 | 6.0 | 7.6 | 8.6 |
| Total expenditures | 37,869 | 50,784 | 63,494 | 12,915 | 12,710 | 25,625 | 34.1 | 25.0 | 67.6 | 100.0 | 100.0 | 100.0 |
| Corresponding income | 40,000 | 60,000 | 80,000 | 20,000 | 20,000 | 40,000 | 50.0 | 33.3 | 100.0 | | | |

Source: Based on National Resources Committee report, *Consumer Expenditures in the United States.*

along with the percentage differences. In 1935 prices, these incomes would be approximately 20 billion dollars smaller, the same as, and 20 billion dollars greater than, the consumer income level of 1935–36.

The most striking feature of table III is the apparent lack of any indication of a limit to any of the wants reflected in the items. At the highest level of expenditure, for every one of the separate items there would be a great increase in expenditure over the lowest. The expenditure for food, the item showing the smallest rate of increase, would be 44 percent greater with the two-thirds greater level of total expenditure.[8] This 44 percent increase in expenditure on food is particularly significant since it is so often stated that the demand for food is limited. Undoubtedly part of the increased food expenditure would go into an improvement in quality— more milk, meat, and fresh vegetables —and only part into an increase in quantity, but in either case it would call for greater farm production for domestic consumption. For each major category of consumption, the structure of wants appears to be such that a big lift in consumer expenditures would create a greatly increased domestic market for every broad class of products.

From a study of this table it is also possible to add a new dimension to the structure of wants. While the demand for all broad classes of foods and services expands with larger national income, it is not a uniform expansion. Greater buying power, with price and other market conditions not significantly changed, is likely to produce a smaller than proportionate expansion in food and housing expenditures and transportation other than automobile. The largest proportionate increase indicated is in expenditures for automobiles and for education. Furnishings, clothing, medical care, recreation, and other miscellaneous items also show a much more than proportionate increase. Increases in the remainder of the items listed would be more nearly proportionate to the increase in total expenditure.

As in the case of individual differences in buying power, the greater the total buying power the less the proportionate emphasis on expenditure for the basic necessities and the greater the emphasis on expenditure for better clothing, automobiles, recreation, and private education.

An actual change in the level of national expenditure would be unlikely to be reflected in just the proportions shown above, because of the adjustments in expenditure habits involved in the transition from one level to another. There is little specific data on the transitional effect of a change in income on the direction of current expenditure. Probably its most important effect would be on the purchase of durable and semidurable goods, whose purchase can so often be postponed. When the income of a family that has become adjusted to a $2,000 level of spending is suddenly reduced, the family is likely to carry over reserves of durable and semidurable goods which can contribute for a time to the family living without involving current expense. Clothing will be worn longer and the family automobile will be tinkered with and repaired instead of being replaced by a later model. Gradually as this extra reserve of durable and semidurable goods is used up, the family will have to adapt its living more nearly to a balanced pattern of expenditures. But in the transition period, a smaller proportion of its expenditure is likely to go into durable and semidurable goods than either before the change in income level or after adjustment has been made to the lower level.

Similarly, an increase in income, that represents a return to levels to which a family was accustomed at some earlier date, is likely to involve a greater than balanced expenditure on durable and semidurable goods. Even a sudden expansion of income to unaccustomed levels appears likely to lead to the sudden acquisition of durable goods to correspond with the higher level of living made possible by the increased income. Data are not available to show the nature and magnitude of these transition changes in the pattern of expenditure, but they are likely to be of sufficient importance to the structure of wants to warrant further research. The evidence of the actual changes in consumption of durable and nondurable goods from 1929 to 1932 point in the direction indicated above.

Two other major dimensions of the structure of wants require exploration—the effect of price relationships on the structure of wants and the trend of change as wants shift through time. On neither of these points are data available for the major categories of consumer expenditure. Pioneer work has been done on specific price relationships in relation to consumption, especially for agricultural products,[9] and on the trend in consumption for a number of specific items. With respect to both these aspects the data are insufficient, and the delineation of these dimensions of the structure of wants must wait upon future research.

The main aspects of the structure of wants can now be summarized in terms of the major items of expenditure as follows: Food, clothing, and shelter are wants finding expression in the largest body of consumer expenditure, accounting for nearly two-thirds of the total.

[8] With the actual variation in consumer income experienced in recent years this expansibility in the demand for food is not apparent, as farm production has been maintained at a relatively constant level, and food prices have dropped markedly, in relation to other prices, with declines in consumer income. This has allowed consumption to be maintained at a relatively constant level.

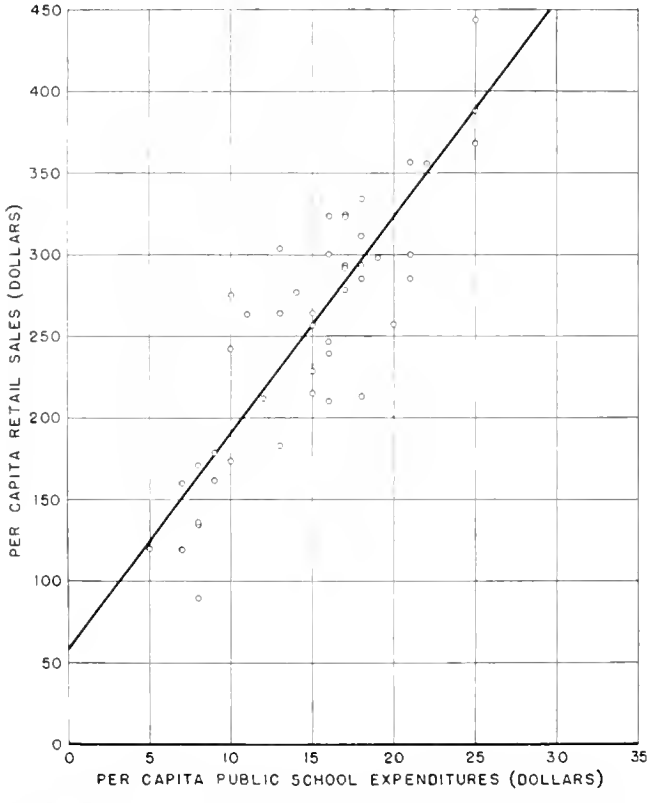
[9] See Bureau of Agricultural Economics, *Agricultural Economics Bibliography No. 58*, October 1935; *The Theory and Measurement of Demand*, by Henry Schultz, Chicago, 1938.

At lower income levels the want for food requires a larger proportion of expenditure while at higher income levels food expenditure is relatively smaller, and expenditure on clothing, travel (including automobile), recreation, and private education play a larger role. Changes in the distribution of income appear unlikely to produce important changes in the direction of expenditure among the major items, provided the total expenditure remains the same. On the other hand, changes in the level of the total consumer expenditure appear likely to produce considerable changes in the direction of expenditure, reflecting the shift in expenditure as the buying power of each income group is shifted upward or downward. A higher national expenditure would involve a somewhat smaller proportion spent on food and a larger proportion spent on clothing, travel, recreation, and private education. Few data are available on the effect on expenditure of the transition from one level of consumer income to another, but it seems likely that a transition to a lower level of expenditure would decrease the proportion of expenditure going to more durable goods and a transition to a higher level would increase the proportion going to such goods. The influences of likely changes in price relationships on the direction of expenditure and trends of change still remain to be worked out. When these are determined the main aspects of the structure of wants will have been covered for the major items of consumer expenditure.

CHART VII

PER CAPITA RETAIL SALES AND PER CAPITA EXPENDITURES FOR PUBLIC EDUCATION, BY STATES

1935




Source: Based on data from the *Census of Business*, 1935; and United States Office of Education, 1935–36.

## Major Items of Social Expenditure

In addition to the wants of consumers expressed through private expenditure, there are many wants, such as those for education, sanitation, highways, church services, and hospital care, which find expression largely through social expenditure. A rough estimate of the principal items of social expenditure indicates that the total social expenditure amounted to at least 5 billion dollars in 1935–36. If this figure is added to the 51 billions of direct consumer expenditure, it gives a total expenditure on consumption of 56 billion dollars, of which at least 9 percent was social expenditure. In addition, consumption by institutional residents amounted to approximately 200 million dollars, and by quasi-institutional groups, such as army, navy, and civilian conservation corps, to 500 million dollars.

The principal items obtained through social expenditure are shown in table IV. Some of these items are supplied only on a social basis, such as roads. Others are partly furnished socially, and partly out of individual expenditures. The total of individual expenditures for the roughly corresponding items is placed beside the social expenditure.

TABLE IV.—*Major items of social expenditures 1935–36 (millions of dollars)*

| | Social expenditures [1] | | | | | Individual expenditures [2] |
|---|---|---|---|---|---|---|
| | Governmental | | | Non-governmental | Total | |
| | Federal | State | Local | | | |
| Education | 47 | 99 | 2,015 | 60 | 2,221 | 506 |
| Health and sanitation | 50 | 42 | 227 | | 319 | 2,205 |
| Recreation | 122 | 9 | 79 | | 210 | 1,643 |
| Reading | 3 | 2 | 37 | 3 | 45 | 551 |
| Highways | 306 | 233 | 517 | | 1,056 | |
| Charities, hospitals and corrections | 135 | 56 | 101 | 119 | 357 | |
| Churches | | | | 821 | 821 | |
| Interest on debt | [3] 857 | 129 | 859 | | | |

[1] Source: See Appendix 18, sec. 3 for derivation of these items. The following governmental expenditures are not included:

| | *Millions* |
|---|---|
| General government | 833 |
| Protection to person and property | 1,081 |
| Development and conservation of natural resources | 940 |
| Operation and maintenance of public service enterprises | 999 |
| Capital expenditures | 1,845 |

Some items included within these categories might properly be included as items of social consumption, e. g., that part of expenditures for police and fire departments which goes to the protection of homes. Some parts of the items included in the table should not be included, e. g., the part of expenditure for highways which should be allocated to business rather than to consumption. The whole field of social expenditure is one upon which much work needs to be done before even a roughly adequate analysis can be made.

[2] *Consumer Expenditures in the United States*, National Resources Committee.

[3] Nearly half of this amount represents interest on Federal debt incurred through loans made to Allies during the World War. This should not be considered as an expenditure for social consumption.

The amount and character of social expenditure is, in large measure, a reflection of the wants of consumers, although it does not involve direct purchase by them. Contributions in the form of taxes and gifts to governments and institutions for purposes of social expenditure are part of the expenditure patterns of individuals. The wants of consumers, and the ability to make those wants effective, are reflected in large expenditures for public education in a wealthy community, or in one sufficiently eager for education to sacrifice direct private expenditures in favor of indirect expenditures via taxes, and large expenditures for religion in a wealthy or especially pious parish. The variation in social expenditure for public education in relation to differences in per capita retail sales, shown in chart VII, emphasizes this close relation between individual and social expenditure.

### Durability and Consumer Wants

So far both consumer and social expenditure have been considered primarily in terms of the types of wants which they are aimed to satisfy. An equally important grouping of consumer wants would be one that took account of the durability of the goods which are purchased to satisfy them. As will become apparent as the structure of the American economy is further examined, important structural characteristics revolve around the factor of durability.

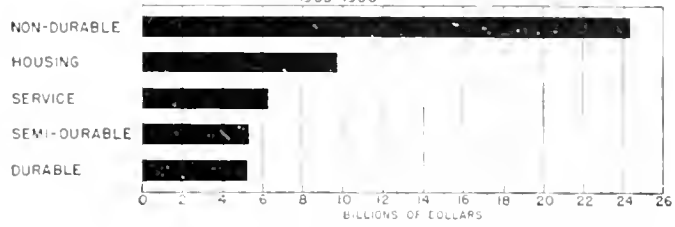
For purposes of analysis, all consumer goods can be grouped into four degrees of durability: durable commodities, semidurable commodities, nondurable commodities, and services. Automobiles and furniture would fall into the durable group since they usually render a series of services over a considerable period of years. Clothing and automobile tires fall into the semidurable group, yielding a series of services but not usually lasting more than a year or so. Food and gasoline fall into the nondurable category since they are usually consumed in what is, for practical purposes, a single operation instead of rendering a series of services during a period of time.[10] Services include the items which do not take an intermediate physical form but are rendered directly to consumers, such as education, music, medical service, and personal service.

The data on consumer expenditure are not yet available in a sufficiently detailed form to make possible an accurate estimate of the proportion of consumer expenditures falling into each class of durability. In chart VIII and in table V, the major items of expenditure are grouped on the basis of the durability categories into

[10] Durability in the sense of rendering a series of services should not be confused with non-perishability. Commodities like salt or wine may be capable of being stored for long periods yet are usually classed as nondurable if they are customarily consumed in a single use.

CHART VIII

AGGREGATE EXPENDITURES FOR CONSUMPTION BY DEGREE OF DURABILITY
1935-1936




Source: Based on data from the report, *Consumer Expenditures in the United States*, National Resources Committee

which they most nearly fall. These groupings reflect degrees of durability only roughly, since the available expenditure categories are, in many cases, combinations of goods of varying degrees of durability. Only half of the total automobile expenditures in 1935–36 went for the purchase of automobiles, and half went for semi- and nondurable goods, such as tires, oil and gas, or for garage and similar services. Expenditures for household furnishings are classed as dominantly durable because they consist to such a large extent of furniture, but they contain such semidurable goods as dish towels and sheets. Recreation, classed as dominantly nondurable, includes the purchase of radios. Housing is separately listed since expenditure for rent constitutes payment for a service provided by a durable good and does not fall clearly into the four categories of durability.

In spite of the mixed character of the data, it is apparent from chart VIII that the bulk of consumer expenditure in 1935–36 was directed to the purchase of goods which were not of a durable or semidurable character. Over 60 percent of expenditure went into categories dominated by nondurable commodities and services and nearly 20 percent into housing. Only approximately one-tenth each went to categories dominated by semidurable and durable consumers goods.[11]

The importance of the distribution between durable and nondurable commodities for the structure of wants lies in the greater sensitivity of expenditure on consumer durable goods to variations in consumer income. As in the case of the major items of consumer expenditure, a shift in the distribution of consumer income would produce little alteration in the proportion of a given expenditure going to durable as against nondurable goods.[12] However, a variation in the level of total expenditure could be expected to make a significant difference, the

[11] It is probable that the grouping of items here used throws more nondurable items into the durable category than vice versa, and tends to minimize rather than to exaggerate the predominance of expenditure for nondurable items.

[12] If the whole of the 50 billion dollars expended by consumers in 1935–36 had been spent according to the expenditure pattern of consumers with incomes between $1,250 and $1,500, 0.8 percent less would have been spent on the items grouped into the durable goods category, 0.6 percent less on semidurable, 0.7 percent less on housing, and 2.1 percent more on goods and services in the nondurable category.

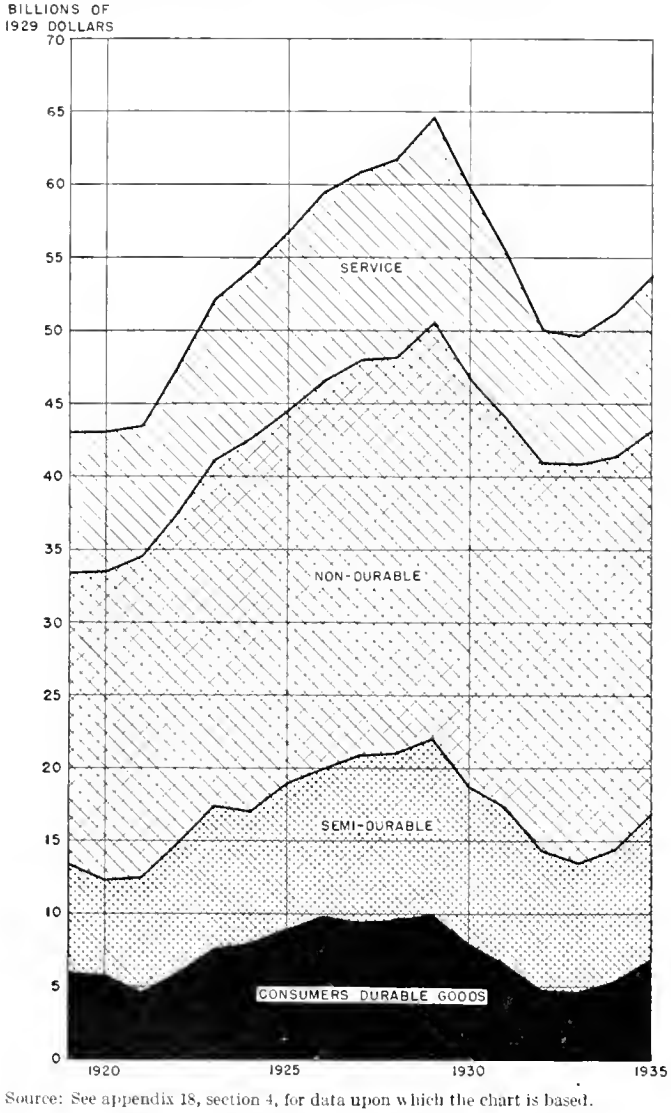
TABLE V. *Effect of level of expenditure on direction of expenditure by durability (millions of dollars)*

| | 37,869 million dollars expended, 40 billion dollar income | 50,784 million dollars expended, 60 billion dollar income | 63,494 million dollars expended, 80 billion dollar income | Absolute increase (millions of dollars) | | | Percent increase | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | 40 to 60 billion dollar income | 60 to 80 billion dollar income | 40 to 80 billion dollar income | 40 to 60 billion dollar income | 60 to 80 billion dollar income | 40 to 80 billion dollar income |
| Furnishings and equipment, and automobiles | 3,201 | 5,294 | 7,363 | 2,093 | 2,069 | 4,162 | 65.4 | 39.1 | 130.0 |
| Clothing | 3,696 | 5,327 | 6,949 | 1,631 | 1,622 | 3,253 | 44.1 | 30.4 | 88.0 |
| Food, household operation, tobacco, and reading | 18,825 | 23,905 | 28,560 | 5,080 | 4,655 | 9,735 | 27.0 | 19.5 | 51.7 |
| Personal care, medical care, recreation, education, transportation, and other items | 4,587 | 6,661 | 8,746 | 2,074 | 2,085 | 4,159 | 45.2 | 31.3 | 90.7 |
| Housing | 7,560 | 9,597 | 11,876 | 2,037 | 2,279 | 4,316 | 26.9 | 23.7 | 57.1 |

Source: Based on National Resources Committee report, *Consumer Expenditures in the United States.*

CHART IX

PRODUCTION OF CONSUMER GOODS AND SERVICES BY DEGREE OF DURABILITY, 1919-1935




Source: See appendix 18, section 4, for data upon which the chart is based.

expenditure on nondurable goods and housing being most stable and that for durable goods being least stable. This is suggested by table V below in which a consumer expenditure of 37,869 million dollars corresponding to an income of 40 billion dollars is compared with that of 63,198 million dollars corresponding to an income of 80 billion dollars, and both are compared to the 1935–36 expenditure corresponding to approximately 60 billion dollars. Each expenditure is calculated on the assumption that prices and proportionate income distribution were the same as in 1935–36 and that consumers followed the patterns of consumption at the different income levels already indicated in chart V. Such calculations take account of the difference in level of expenditure but, of course, take no account of the transitional changes in expenditure.

In practice, rapid changes in the total of consumer expenditure are usually accompanied by significant transitional and price changes so that the expenditure on consumer durable goods is more sensitive to variations in consumer expenditure than these figures would indicate. In chart IX below the consumer expenditure on durable, semidurable, and nondurable goods and for services is indicated for recent years. For each series the estimates of dollar expenditure have been deflated by a price index for the particular category so as to give a quasi-physical measure of quantity of production stated in 1929 dollars. The greater sensitivity of durable goods expenditure to variation in total expenditure is at once apparent in the data for the depression period. The quantity of durable goods purchased dropped 52 percent from 1929 to 1932, whereas the semidurable goods purchased dropped only 20 percent and the nondurable dropped 8 percent. The purchase of services, represented by a less reliable figure, appears to have dropped approximately 33 percent. If the drop in total expenditure had been simply one of level without significant transitional or price changes and had followed the 1935–36 pattern for the separate income groups, the percentage drops would not have corresponded to those given above.

Until it is possible to disentangle the influence of prices from that of the transition from one level to another it is not possible to delineate that dimension of the structure of wants which has to do with the influence of prices on the relative expenditures on durable and nondurable goods. Likewise the trends

of change in the proportion of expenditure going into items of different degrees of durability must wait on further research.

In summarizing the structure of wants from the point of view of durability, the outstanding characteristic is the greater sensitivity to changes in expenditure with greater degrees of durability. This appears to be due both to greater expenditure on durable goods at higher levels of total expenditure and to greater expenditure with a transition from a lower to a higher level of expenditure. In the recent depression, the proportionate decline in the volume of consumer durable goods purchased appears to have been due not only to a lower and declining level of total expenditure but also to the relative inflexibility of the prices of more durable goods.[13]

### Specific Items of Consumer Expenditure

Further light on the structure of wants can be found by analyzing the purchase of specific items. In a recent report of the National Resources Committee[14] the production of each major segment of the national economy has been analyzed with particular reference to its sensitivity to changes in consumer income and to its trend of change through time. Since the production of an industry supplying consumer goods tends to parallel its sale to consumers, these analyses can be used as a rough guide to the behavior of consumer expenditure. In table VI below data are given for 39 items of consumer expenditure. The items are arranged approximately in the order of their sensitivity to variations in consumer income. As is to be expected, the durable items automobiles, pottery, and furniture are the most sensitive. Next come the semidurable, then the nondurable, and, with some exceptions, the services. Railroad passenger traffic, telegraph, telephone, and postal service, and bituminous coal are only partly used by consumers, being partly used by business and government. Presumably the consumer uses are on the whole less sensitive than the producer uses, so that, insofar as production for use by consumer is concerned, the items should show less sensitivity than they do in the table. To the extent that knit goods are made up of stockings they are of comparatively short life and partake of some of the characteristics of nondurable goods. This differential sensitivity closely parallels that already shown for the durable, semi- and nondurable goods but by its detail it gives greater precision to this particular dimension of the structure of wants.

One other dimension of the structure of wants can be sketched in from these same data, namely, the trend of change in consumer wants. Chart X below shows the trends of change in the purchases of particular items as they would arise if there were no variation in consumer income but consumers had the same income to dispose of year after year. Chart X gives a more significant indication of the structure of wants than would unadjusted trends of change which reflected variations in income as well as changes in wants. The chart shows the percent change in the amount of each

[13] See chapter VIII, p. 130.

[14] *Patterns of Resource Use.*

TABLE VI. *The sensitivity of consumer goods to changes in consumer income*

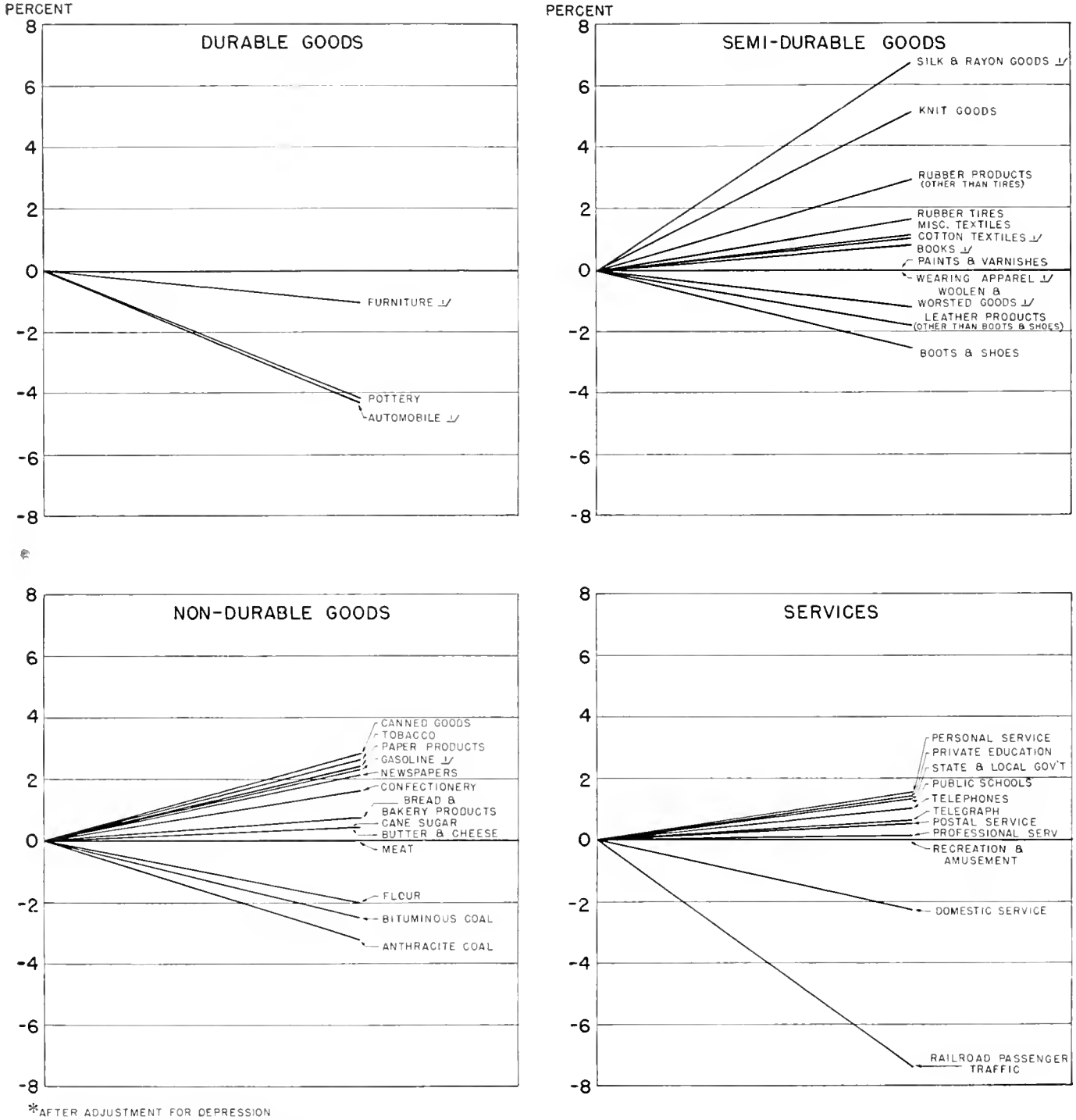
| Index of sensitivity[1] | Services | Nondurable | Semidurable | Durable |
|---|---|---|---|---|
| 0–5. | State and local government<br>Professional service.<br>Private schools.<br>Public schools. | Flour | | |
| 5–10. | Personal service<br>Telephone<br>Postal service. | Cane sugar.<br>Bread and baking.<br>Butter and cheese.<br>Meat. | Knit goods | |
| 10–15. | | Gasoline.<br>Newspapers<br>Anthracite coal.<br>Tobacco. | | |
| 15–20. | Recreation and amusement.<br>Domestic service<br>Telegraph. | Confectionery and chocolate<br>Canning and preserving | Book printing and publishing.<br>Boots and shoes.<br>Wearing apparel. | |
| 20–30. | | Bituminous coal.<br>Paper products | Miscellaneous textiles.<br>Silk and rayon goods.<br>Rubber tires.<br>Woolen and worsted goods<br>Cotton textiles. | |
| 30–40 | Railroad passenger traffic | | Paints and varnishes.<br>Leather products other than shoes<br>Rubber products other than tires | |
| 40–100<br>Over 40. | | | | Pottery<br>Furniture |
| Over 100 | | | | Automobiles |

[1] The percent increase in sales which could be expected with a 20-percent increase in consumer income, e. g., from 65 to 78 billion dollars. Based on table II of the report *Patterns of Resource Use*, National Resources Committee.

CHART X

# TRENDS OF CHANGE IN CONSUMER WANTS

## AVERAGE ANNUAL RATE OF CHANGE*




*AFTER ADJUSTMENT FOR DEPRESSION

1/ DATA FOR THESE PRODUCTS LESS RELIABLE THAN FOR OTHERS

Source: Based on the formulas shown in the respective summaries of the report, *Patterns of Resource Use*, National Resources Committee. The rate of change is computed from the net relationship with time shown in each formula when the other factors are held constant.

item purchased which would be expected between successive years if consumer incomes remained constant. There is no clear evidence that trends of change in wants are significantly affected by the factor of durability. The more significant downward trends are the trends away from pottery, leather boots and shoes, anthracite and bituminous coal, and domestic service.[15] Even more marked is the trend away from railroad travel as the automobile and bus play a larger role. The more important upward trends are those in silk and rayon, knit goods, rubber goods other than automobile tires, canning and preserving, tobacco, paper products, and gasoline. These trends reflect a definite shift in the goods purchased. They may reflect changes in prices, particularly in the case of silk and rayon, the introduction of substitute items as the automobile displaces railroad travel, a change in tastes as in the case of tobacco or a variety of other factors, such as changes in the quality of product or in current conceptions of a balanced diet. Whatever the cause of the trends of change, they reflect the constantly changing, nonstatic character of consumer demands and give some indication of the dynamic character of the structure of consumer wants to which the resources of the Nation must be geared in productive activity.

In the foregoing, an effort has been made to sketch in the main characteristics of the structure of consumer wants. Wants are important for economic activity because if there are no wants to be filled there is no basis for such activity. As long as there are wants to be filled and resources available to fill them, the basic essentials for economic activity are present. Analysis of the structure of wants has disclosed the dominant role played by the desire for food, clothing, and shelter, more than 65 percent of consumer expenditure in 1935–36 going to fill these wants. Moreover, it has shown the tremendous residue of unfilled wants which would find expression in the purchase of goods if consumer incomes were sufficiently increased. The increased expenditure with higher incomes would be distributed over all of the major categories, showing that in none of them is there an immediate limit to the wants to be filled. The indications are clear that American consumers, if they had sufficient money income, would constitute a market sufficient to absorb all the production which American industry has the resources to turn out. It is not for lack of wants to be filled that economic activity is carried on at the low level of recent years.

[15] The declining trend in bituminous coal may be accounted for primarily by a declining trend in business use.

# CHAPTER III.—THE STRUCTURE OF RESOURCES

The resources of the country provide the second major element in the structure of the economy. Wants and resources constitute the two poles of the economic process. It is the function of that whole process to use the resources in satisfying wants.

## National Resources

The most concrete resources of the Nation are its natural resources—soil and minerals, forests and streams. Equally concrete is the plant developed by men—the homes and factories, dams and powerhouses, machinery and equipment, farm improvements and irrigated areas—all the man-made physical improvements. These natural resources and man-made improvements provide the physical resources available for further production and contribute to the structure of the American economy, particularly in respect to its geographical characteristics.

Of greater significance as a resource is the manpower of the Nation. Without the skills and the activity of men and women, physical resources would be of no avail. Skilled farmers and workers, skilled craftsmen and technicians, skilled scientists, business men, politicians, artists, and homemakers—these and other productive workers constitute the Nation's greatest resource. The characteristics of the available manpower make up an element in the structure of the whole economy.

In addition to the natural resources, plant, and manpower which are available to be employed in satisfying consumer wants, there are other types of resources which condition the process of production even though they are not themselves consumed. These resources are (1) the climate and topography which condition the physical environment of production, (2) the techniques of production, developed in the past, upon which current activity rests, and (3) the social institutions which provide the social framework without which organized production could not take place. An equable climate, complex institutions, and modern techniques constitute

Source: *Report of National Resources Board, December 1, 1934.*

MAP 1.—RELIEF MAP OF THE UNITED STATES

national resources no less than the natural resources, plant, and manpower.

These resources, the natural resources, plant, and manpower which can be used to satisfy wants, and the climate, institutions, and techniques which condition this use, constitute the basis of national well-being. The quantity and quality of national resources largely determine the degree to which wants of American consumers can be satisfied directly out of American resources. The location of both natural resources and man-made plants give to the economy much of its geographical structure. The organizational structure by which resources and wants are brought into relation to each other determines the extent to which these resources yield a high level of living or economic and social waste.

### Natural Resources

As compared with other nations, the United States is richly supplied with cropland, forest, the basic mineral resources necessary for peacetime activity, and the strategic minerals upon which war industries depend. The soil and climate of the United States will permit the production of all of the major crops with the exception of such tropical products as rubber, tea, and coffee. Most of the industrially important minerals are available in the continental United States. Power is available in great quantities direct from the rivers and streams and generated from ample supplies of fuel. Since the country is waterbound on both the east and west, the resources of both oceans are available. Codfish of the east and salmon of the west as well as the other fisheries from oceans and lakes provide a significant food resource. In natural resources, the country is indeed rich.

The most significant structural aspect of the country's natural resources can be portrayed in a series of maps. Map 1 shows in relief the physical features of the continental United States, indicating the basic relationships of distance and accessibility which in a measure control the manner in which physical resources can be used. Maps 2, 3, and 4 show the forests still available, the land suitable for crops, and the land suitable for pasture but not for crops.

In map 5 the value of farm land is indicated. Comparison of maps 3 and 5 shows the greater value of farm land in some areas, reflecting not only the better resource, i. e., more fertile soil, but also more favorable location in relation to markets. This farm land is much the most valuable of the country's natural resources. In addition to the surface resources of soil and timber, subsurface mineral resources of coal and oil, iron ore, and a host of lesser minerals make up the remaining value of natural resources. The geographical location of coal, iron, and oil deposits is shown in chapter IV, maps 21 and 22, and appendix 16, map A 49, in connection with the location of industries working these minerals. The remaining minerals, minor in volume but of strategic importance, are scattered, primarily in the mountainous areas of the Rockies and to a lesser extent the Appalachians.

The richness of natural resources is emphasized by the small extent to which the economy draws on outside sources of supply. Although individual items of import are vitally important for specific purposes, the contribution of necessary imports to the whole economy is of minor proportions. As indicated in table 1, approximately 43 percent of the total American imports in both 1929 and 1937 consisted of tropical products and the semitropical product, cane sugar. These items constituted 65 percent in 1929 and 79 percent in 1937 of the imports of all raw materials. Imports of minerals amounted to between 6 and 7 percent of the value of total imports. Together, imports of tropical products and minerals amounted to an insignificant figure in relation to the total national production, being equal to about 2 percent of national production in 1937. Even some of these imports, particularly sugar, did not result from lack of resources, but, like most other imports, were the result of the greater productivity of American workers and management in producing other things which could be exchanged for these products. Thus the dependence of this country on foreign natural resources is small in relation to total activity.

TABLE 1.—*Imports of tropical and semitropical products into the United States, 1929–37* [1]

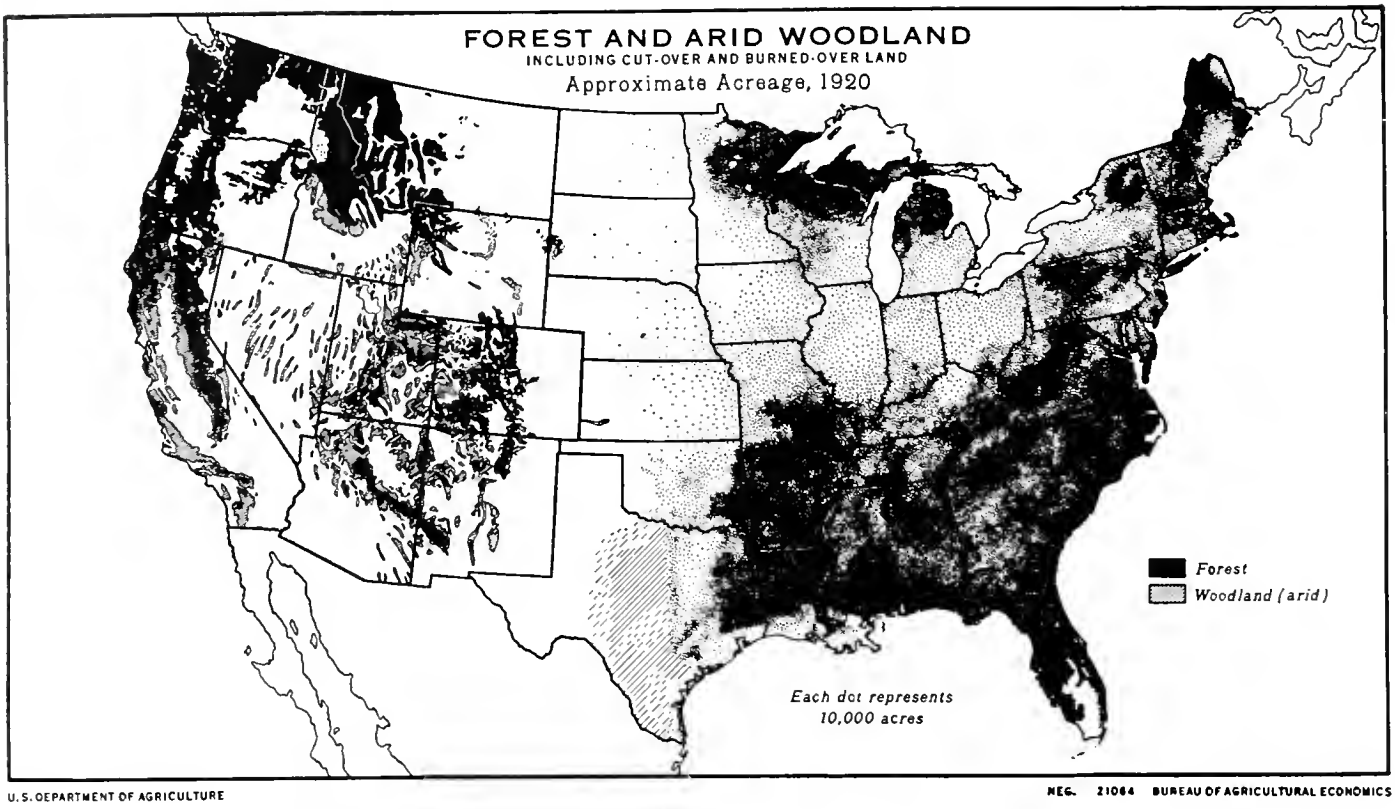
[Thousands of dollars]

| | 1929 | 1937 | Percent change 1929-1937 |
|---|---|---|---|
| Sugar | 307,687 | 345,972 | +12.4 |
| Rubber and rubber substitutes | 244,703 | 248,807 | +1.7 |
| Coffee | 303,857 | 151,829 | −50.0 |
| Fruits and nuts | 153,780 | 146,089 | −5.0 |
| Tea | 25,866 | 21,366 | −17.4 |
| Other tropical products | 959,409 | 493,551 | −48.6 |
| Total tropical products | 1,995,302 | 1,407,624 | −29.5 |
| All imports, including Hawaii and Puerto Rico | 4,579,149 | 3,241,015 | −29.2 |
| Ratio of tropical to all imports (percent) | 43.6 | 43.4 | ..... |
| Raw tropical products | 1,378,571 | 794,707 | −42.4 |
| All raw imports | 2,117,113 | 1,009,042 | −52.3 |
| Ratio of raw tropical to all raw imports (percent) | 65.1 | 78.6 | ..... |
| Note: Value of silk imports: | | | |
| Raw | 432,310 | 108,500 | −74.9 |
| Manufactured | 39,037 | 11,100 | −71.6 |

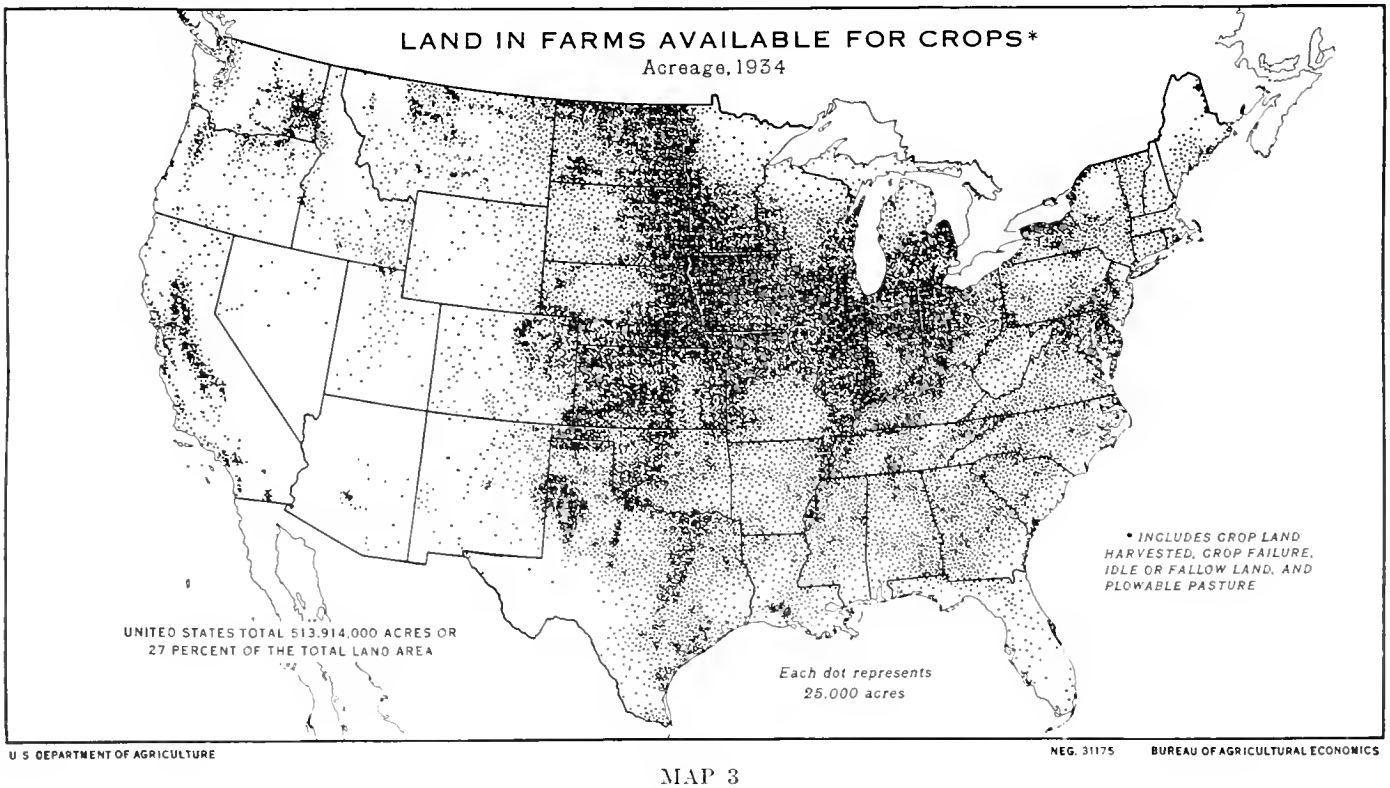
Source: Bureau of Foreign and Domestic Commerce, *Foreign Commerce and Navigation of the United States* and December issues of *Monthly Summary of Foreign Commerce of the United States* for the respective years.

[1] General imports in 1929; imports for consumption in 1937. Includes imports from Hawaii and Puerto Rico.

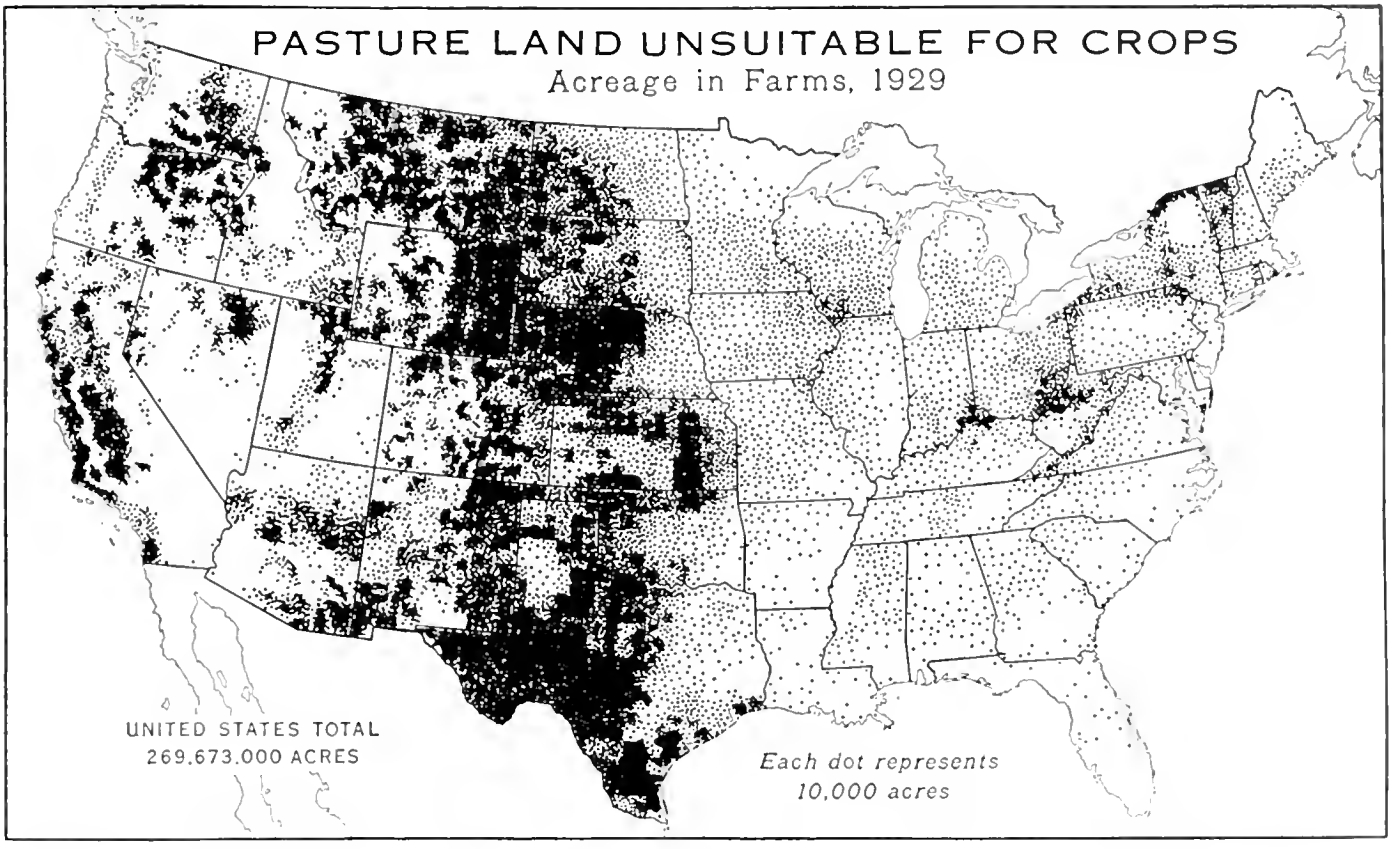
Likewise, with a few exceptions such as rubber and tin, foreign resources are not of strategic importance either in peacetime or in wartime. The strategic minerals are listed in table II showing the peacetime needs as reflected in the amounts imported in 1929 and 1937 and the estimated war requirements. Many of these minerals are essential to the making of high grade


FOREST AND ARID WOODLAND
INCLUDING CUT-OVER AND BURNED-OVER LAND
Approximate Acreage, 1920
Forest
Woodland (arid)
Each dot represents
10,000 acres
U.S. DEPARTMENT OF AGRICULTURE
NEG. 21064 BUREAU OF AGRICULTURAL ECONOMICS

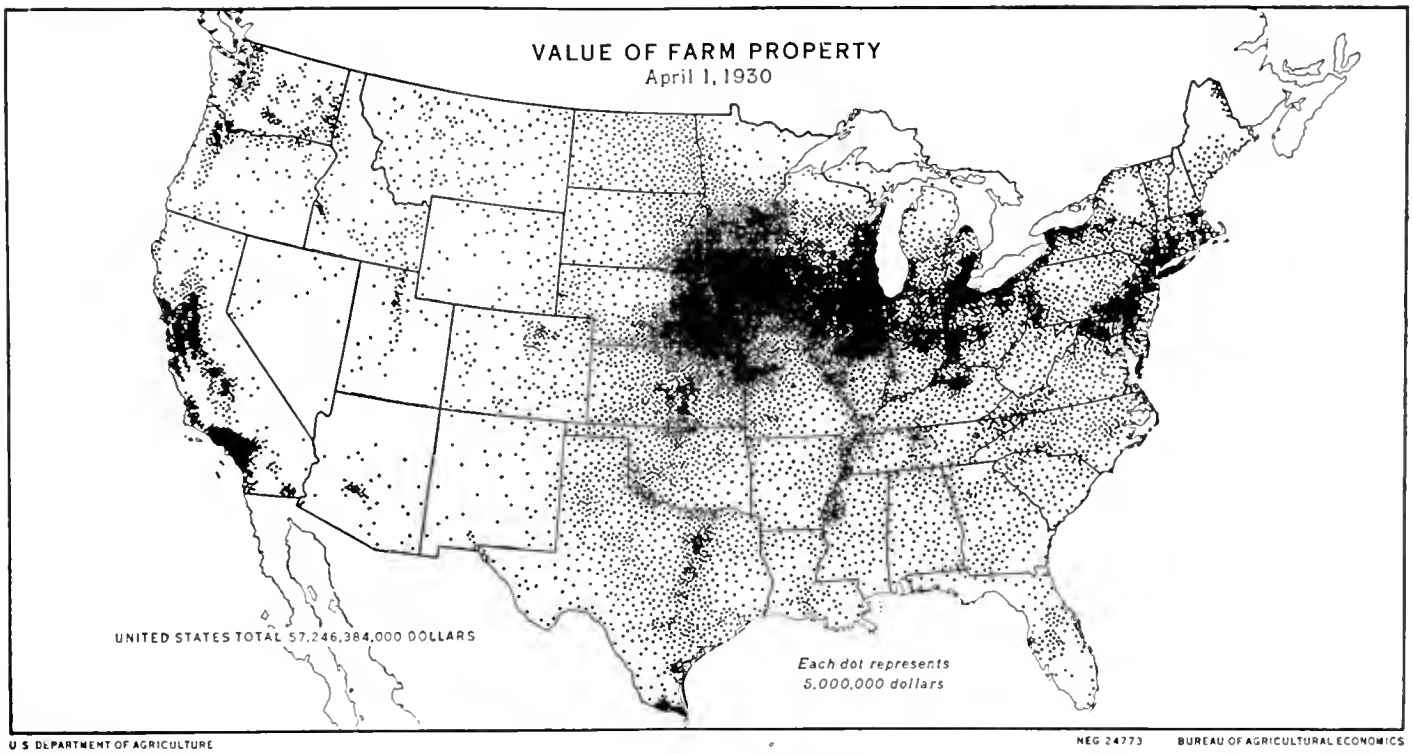
MAP 2


LAND IN FARMS AVAILABLE FOR CROPS*
Acreage, 1934
* INCLUDES CROP LAND HARVESTED, CROP FAILURE, IDLE OR FALLOW LAND, AND PLOWABLE PASTURE
UNITED STATES TOTAL 513,914,000 ACRES OR
27 PERCENT OF THE TOTAL LAND AREA
Each dot represents
25,000 acres
U S DEPARTMENT OF AGRICULTURE
NEG. 31175 BUREAU OF AGRICULTURAL ECONOMICS

MAP 3




MAP 4




MAP 5

79418 —39——3

TABLE II.—*Imports and domestic production of crude minerals*

[Imports, 1929, 1935, 1937; domestic production, 1935; and estimated war needs]

| Commodity | Imports, 1929 | | Imports, 1935 | | Imports 1937 value in 000 s | 1935 domestic production quantity in short tons | War needs for 2 years quantity in short tons |
|---|---|---|---|---|---|---|---|
| | Quantity (short tons) | Value (000 s) | Quantity (short tons) | Value (000 s) | | | |
| Tin, ore and bars, blocks, pigs, etc. | 97,725 | $91,906 | 72,168 | $69,921 | $104,418 | 50 | 60,000 |
| Nickel ore and pigs, bars, plates, sheets, etc. | [1] 48,333 | 19,419 | [1] 37,866 | 17,181 | 23,987 | 0 | 40,000 |
| Manganese ores | 362,225 | 8,451 | 211,969 | 4,208 | 10,711 | [2] 29,599 | 1,000,000 |
| Asbestos | 262,426 | 11,153 | 166,586 | 5,125 | 10,470 | 9,415 | |
| Chromite | 355,746 | 2,666 | 290,151 | 3,604 | 7,324 | 493 | 300,000 |
| Bauxite | 426,509 | 1,754 | 223,954 | 1,419 | 3,609 | 261,981 | |
| *Tungsten, ore and concentrates* [3] | 2,987 | 1,704 | 446 | 384 | 2,940 | 2,395 | 10,000 |
| *Mica* [3] | 3,504 | 2,180 | 4,878 | 909 | 2,067 | 37,643 | [4] 3,000 |
| Antimony | 1,864 | 231 | 4,587 | 545 | 1,775 | 3,616 | 35,000 |
| *Pyrites* [3] | 575,680 | 1,508 | 444,767 | 1,313 | 1,344 | 575,895 | |
| *Mercury or quicksilver* [3] | 543 | 1,417 | 297 | 382 | 1,228 | 666 | 950 |
| *Kaolin, china and paper clay* [3] | 279,912 | 2,699 | 125,963 | 960 | 1,211 | 523,656 | |
| *Magnesite* [3] | 53,182 | 819 | 26,164 | 467 | 858 | 255,641 | |
| Graphite | 23,961 | 1,065 | 18,361 | 526 | 752 | [5] | |
| *Talc and soapstone* [3] | 31,247 | 671 | 23,896 | 492 | 473 | 172,716 | |
| *Fluorspar* [3] | 54,345 | 481 | 16,340 | 179 | 402 | 123,741 | |
| *Barite* [3] | 85,279 | 284 | 47,047 | 246 | 327 | 218,075 | |
| Other imported crude minerals | | 141,945 | | 45,707 | 52,442 | | |
| Total imported crude minerals | | 290,383 | | 153,598 | 226,338 | | |

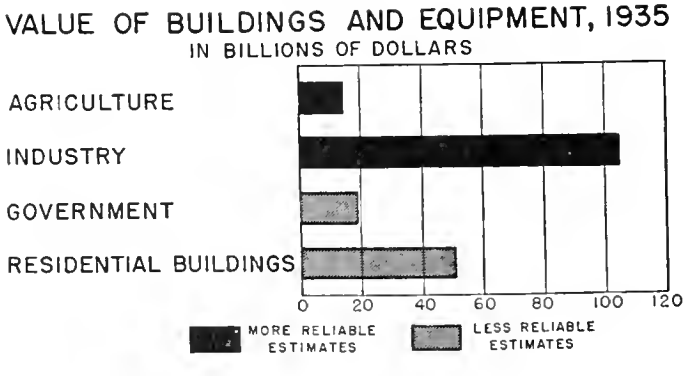
Sources: Bureau of Mines, *Minerals Yearbook*, 1937, for domestic production, Bureau of Foreign and Domestic Commerce, annual and monthly publications, for imports. *National Resources Board Report, 1934*, p. 446, for estimates of war needs

[1] Exclusive of bars, plates, sheets, etc., which accounted for $354,000 and $53,000 of total value in 1929 and 1935, respectively.
[2] Gross imports reported as "ore content."
[3] Could be supplied from United States resources if foreign supply was cut off or price became high enough to induce American production.
[4] Sheets and splittings.
[5] Bureau of Mines not at liberty to publish figures.

NOTE.—General imports in 1929; imports for consumption in 1935 and 1937.

steel suitable for machine tools. These and others are essential in the production of war materials. Yet even for most of these strategic minerals the country is less dependent on foreign resources than the imports would indicate. In the case of the minerals italicized in the table there are deposits which could be worked if foreign supplies were cut off or became too expensive. Only in the case of the 8 items not italicized, of which the most important are nickel, tin and manganese, is the country dependent on foreign sources. A two year's war supply of these items, if they could be obtained at 1935 prices, would cost only approximately 114 million dollars, while a year's peace time requirement in 1937, measured by the imports of that year, was purchased for 163 million dollars. This essential independence of foreign resources means that the natural resources which primarily affect the structure of the American economy are the resources of the continental United States.

CHART I




Source: See appendix 18, section 5.

## Productive Plant

Of secondary importance for longer periods, but of great importance for shorter periods, is the productive plant which men have developed. In the course of the centuries during which the continent has been inhabited, productive instruments for making use of natural resources have been developed and now exist in the form of the buildings, equipment, and improvements. This productive plant includes that employed in all the branches of economic activity, in agriculture, mining, manufacturing, trade, construction, government, the service industries, and residential housing.

The total value of this plant in 1935 was something like 190 billion dollars divided among major categories in the manner indicated in chart I. These figures represent the very crudest sort of estimates. In making the estimates, farm buildings and equipment have been included as agricultural plant, but land has been excluded on the ground of its being primarily a natural resource. Some part of the value of agricultural land is the result of man-made improvements such as drainage and irrigation but no data were available to make such an allocation. The structural significance of the specific categories will become apparent in the discussion of the structure of production in chapter V.

The structural significance of the productive plant as a resource is primarily a short-run matter of location and of industrial mobility. Manmade plant differs from natural resources in not being fixed and located by nature. A new plant can be built; a new mineral deposit can only be found. Plant location thus does not constitute the same fixed element in the structure

of the economy as does the location of natural resources. At the same time, existing plant, until it becomes obsolete or wears out, is like a fixed natural resource except to the extent that it can be dismantled and in part removed to a new location as some textile mills were moved from New England to the South. Thus, the national plant can be thought of as capable of a gradual change in location as particular buildings and equipment wear out or become obsolete and are replaced by new buildings and equipment in new locations, and as equipment is occasionally transferred from one region to another.

Existing plant represents an element of relative fixity in relation to type of industrial activity as well as of place. Many buildings and even some equipment may be put to various uses. But insofar as buildings and equipment are specialized, like a railway locomotive or a knitting frame, they give direction to activity until they are abandoned or replaced by plant designed for other uses.

The possible speed of this slow mobility of plant is suggested by the rate at which new plant and equipment is built.[1] In the period since 1919 new plant was built at a rate to duplicate the value of the total existing plant in approximately 15 years. A rough indication of the mobility of the major categories of plant are given in table III below:

TABLE III.—*Approximate years necessary to reproduce existing plant at the average annual rates of construction from 1919 to 1933*

| | Years to replace plant |
|---|---|
| Residential housing | 19.8 |
| Industrial[1] | 17.7 |
| Agricultural | 12.1 |
| Government | 7.4 |
| Total | 15.4 |

Source: For explanation, see appendix 18, sec. 5.

[1] Industrial includes manufacturing, mining, utility, trade, and construction and services other than government and residential housing.

The secondary importance of the existing plant can be seen by comparing its value with the annual production of the country. In 1929 and again in 1937 the national production amounted to approximately 66 billions of 1935 dollars. Since the productive plant amounted in 1935 to approximately 190 billion dollars the plant is only equal to the value of approximately three years of production at the levels of those years. If residential housing and government plant be excepted the value of the total agricultural and industrial plant would be equal to less than 2 years' production at that level. If the whole waste of the depression due to idle men and idle machines could have been used to build agricultural and industrial plant, the existing plant could have been completely rebuilt. Thus, in comparison with annual production or with the wastes of depression, existing plant is not of dominant long-run importance. It is mainly important for the structure of the economy as its character and location condition the structure of production in the immediate future.

[1] It must not be assumed that plant mobility depends only on the replacement rate. The presence of a skilled labor supply, ancillary industries, and established business relations tend to hold an industry in its old location even when new plants are being constructed.

## Manpower

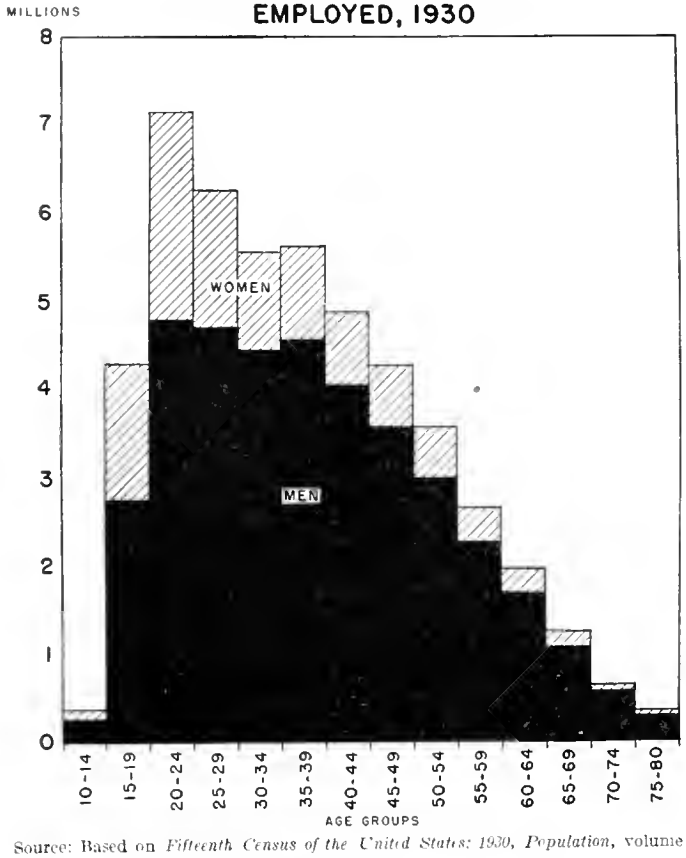
Manpower is by far the most important resource of the Nation and the resource likely to involve the largest waste. The millions of individual workers constitute the backbone of production, and their activity as skilled and unskilled workers, managers, artisans, farmers, teachers, doctors, or independent business men, provides the primary basis for the nation's standard of living. Correspondingly, if available workers are idle, production and level of living are lower than resources make possible. Manpower, potential work, is a perishable resource like water-power. Ten or fifteen million idle workers combined with idle machines can mean a tremendous loss in potential national income. In addition, the failure to use available manpower reduces the effectiveness of future production as idleness breeds frustration and loss of skills. The magnitude of losses from waste of manpower throw the wastes in the exploitation of natural resources into insignificance.

Just what constitutes the nation's available manpower is a question which cannot be easily answered. Much of the productive activity of the country is carried on within the homes as the housewife prepares meals, keeps house, nurses children, launders clothes, and carries on the numerous home activities. Yet the available statistics are geared to throw light only on manpower available for gainful activity, i. e., activity aimed to bring in money income. From the point of view of the structure of the whole economy this part of the total manpower is undoubtedly the more significant in that the organizational structure concerns primarily the relations among these gainfully employed.

An approximate idea of the manpower available for gainful employment can be obtained from the census of occupations. As of April 1, 1930, the date of the most recent occupational census, 48,829,920 persons, or 39.8 percent of the population reported themselves as "gainfully occupied." This figure includes not only wage and salaried workers but business and professional workers, farmers and unpaid family workers on farms. It includes people who were temporarily unemployed but does not include persons who were seeking employment but had not yet held a job. It probably includes

CHART II

NUMBER OF MEN AND WOMEN GAINFULLY EMPLOYED, 1930




Source: Based on *Fifteenth Census of the United States: 1930, Population*, volume V, page 115.

some persons who had retired but might be induced to take gainful employment if conditions made such employment desirable. Very probably it includes many persons who were unwilling to report that they had no gainful occupation. The figures for gainfully occupied taken from the occupational census can only give an indication of the magnitude of the available manpower and its characteristics and should not be regarded as precise.

An indication of the age and sex distribution of the gainfully occupied in 1930 is given in chart II. Approximately a quarter of the gainfully occupied were women and three-quarters were men. When the gainful workers are grouped by five-year age intervals the largest number of gainful workers fall in the 20–24 year age group; the bulk of workers fall between the ages of 20 and 55, 77 percent of the men and 76 percent of the women falling into this range.

The proportion of each age group reporting themselves as gainfully occupied throws further light on the characteristics of the available manpower. The percentages for men and women are indicated separately in chart III. For the men, the highest proportion gainfully occupied in any age group is in the group between 35 and 39, 98 percent of this group being occupied. For the women, the highest proportion occupied is in the 20–24 year group, 42 percent being gainfully occupied. Over 95 percent of the men between 20 and 55 reported themselves as gainfully occupied but only 27 percent of the women.

The figures given above may suggest that with any given population the available manpower is a fixed amount. Actually, the number of workers available is not fixed, but varies with conditions. For example, there is a clear relationship between the supply of labor and the level of real earnings. The higher the level of earnings, the smaller the proportion of the population which will seek work. This does not mean that higher wage rates in a community will not draw in more workers. Rather it reflects the fact that as the principal earner of a family gets higher earnings, either because of fuller employment or higher wage rates, there is less need for other members of the family to work. Children can be kept in school longer, the old folks can retire earlier, and the housewife can remain at home.

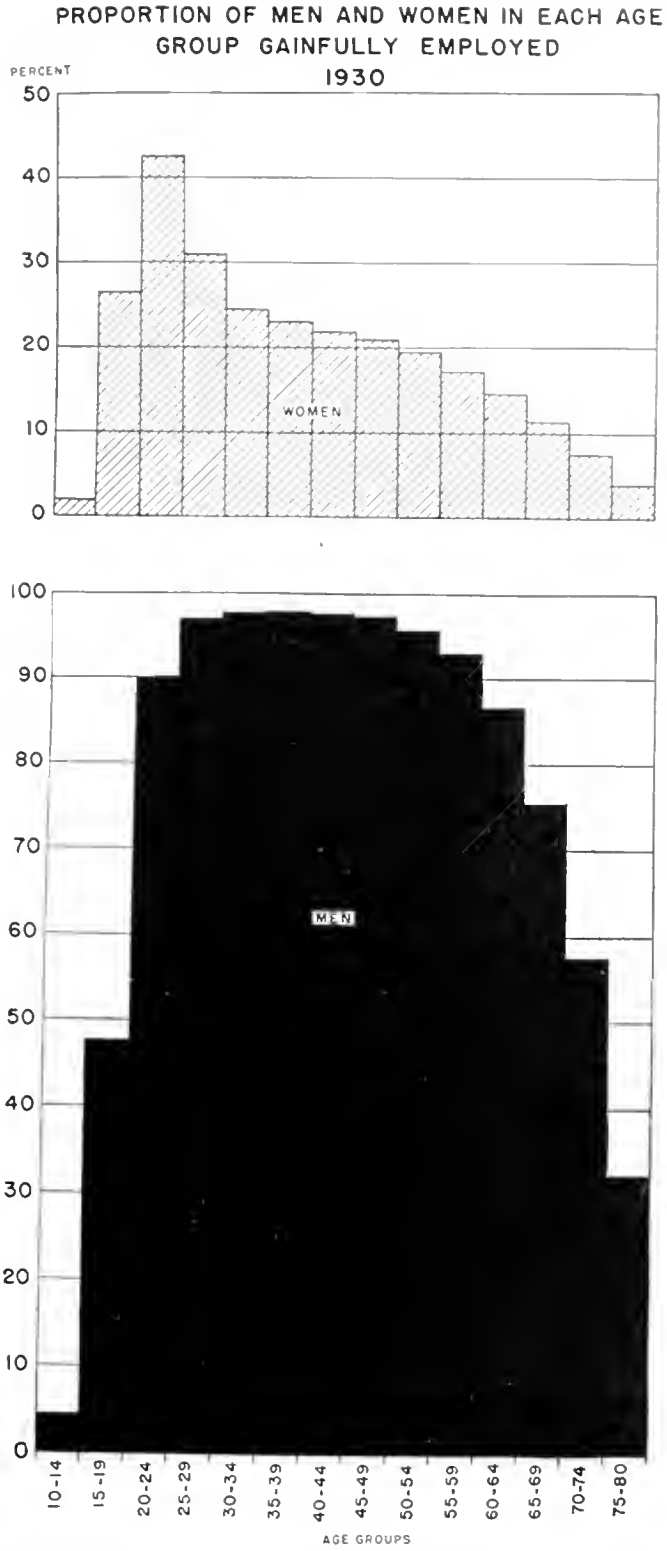
The influence of the level of earnings on the labor supply is appraised in a recently published analysis of the statistics of the gainfully occupied in cities with different levels of earnings.[2] The results of this analysis are summarized in chart IV which shows the correlation between average earnings in 37 cities and the number of persons over 10 years of age per thousand of population reporting themselves as gainfully occupied.[3] The line on the chart indicates the approximate relation between earnings and the proportion of the population seeking work. It suggests that if the earnings of adult male workers averaged $2,000 a year, and women's wages bore the customary relation to men's, roughly 44 percent of the urban population would be in the gainfully occupied class; whereas if the average earnings of adult male workers were $1,000 a year, women's earnings corresponding, over 48 percent of the population would be employed or seeking employment. There is thus evidence of some variation in the total manpower available as earnings themselves vary.

[2] "Studies in the Supply Curve of Labor; the Relation in 1929 between Average Earnings in American Cities and the Proportions Seeking Employment," by Erika H. Schoenburg and Paul H. Douglas, *Journal of Political Economy*, Vol. XIV, No. 1, February 1937.

[3] Adjusted for differences in age distribution in different cities, age distribution in Chicago being used as the base. This is sufficiently typical of the urban population of the country to make the statement above generally applicable. It is to be noted that a larger proportion of the urban population tends to be employed than the 39.8 percent for the country as a whole. This is undoubtedly due in large part to the drawing of persons from the country to the city as they come of working age so that rural areas have more nonworking children per unit of population than do urban areas.

Four cities out of the 41 cities used in the study are excluded from the chart because of evidences of abnormality—Washington, D. C.; Scranton, Pa.; Salt Lake City, Utah; and Fall River, Mass.

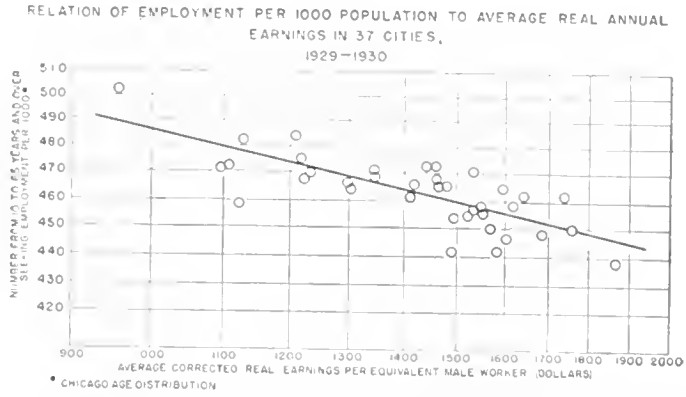
CHART III




Source: Based on *Fifteenth Census of the United States: 1930, Population*, volume V, page 115.

The main difference in available manpower due to a difference in the level of earnings occurs in the case of young people, old people, and women. If the data in

CHART IV

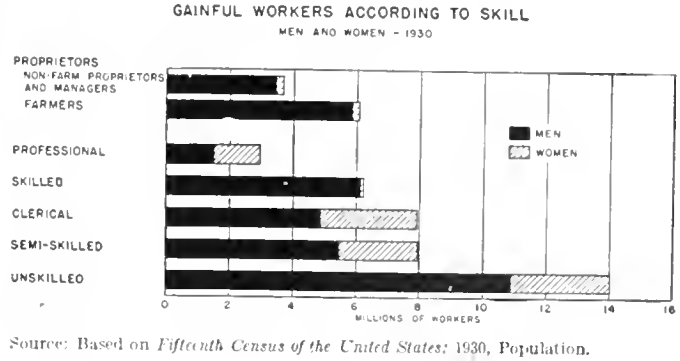



Source: "Studies in the Supply Curve of Labor; the Relation in 1929 Between Average Earnings in American Cities and the Proportion Seeking Employment," Erika H. Schoenberg and Paul H. Douglas, *Journal of Political Economy*, volume XIV, No. 1, February 1937, pages 77–79.

chart IV are considered for men and women separately, the number of women entering the labor market at the level of $1,000 of earnings per male then would be 80 percent greater than at the $2,000 level, whereas the number of men would be only 6 percent greater. Of the men, virtually all the additional workers would be between the ages of 14 and 18, although some additions would come from men over 65.

A third characteristic of the available manpower is the degree of skill. A very crude division of the total gainfully employed into groups according to skill is given in chart V. The chart shows those skills which, in 1930, were being used and takes no account of the fact that persons with professional equipment might be driving taxis or skilled carpenters might be running elevators. For the majority of male workers in 1930, the resulting distortion is probably slight, but for certain groups the distortion may be very considerable. Only certain types of jobs are ordinarily open to Negroes. No one knows how many persons with higher education and highly developed skills act as porters in railway stations and as elevator operators. Similarly, certain occupations are usually closed to women in spite of their training and equipment or are

CHART V



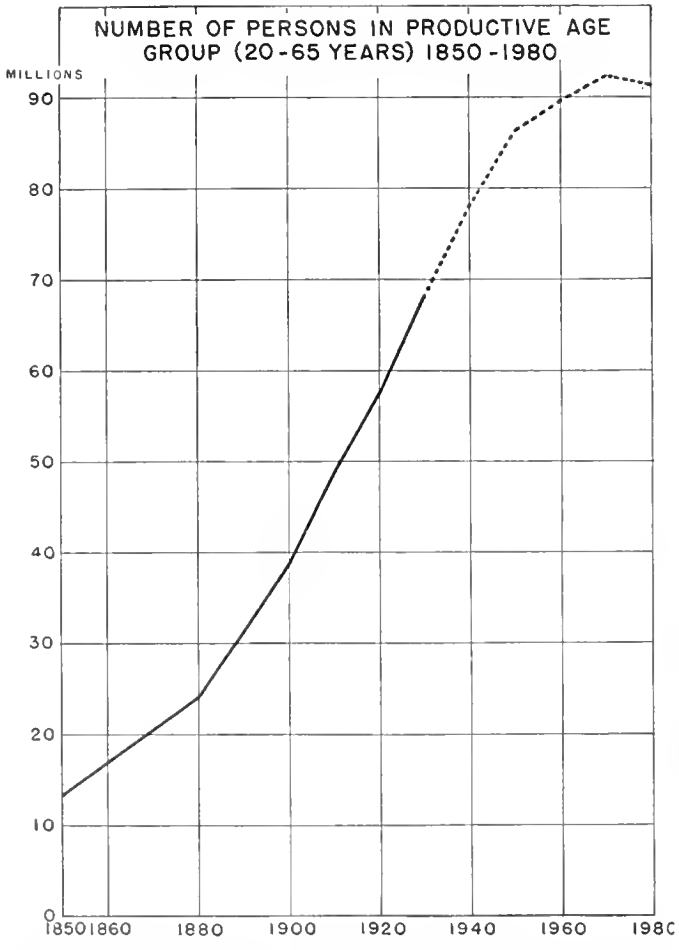

Source: Based on *Fifteenth Census of the United States:* 1930, Population.

available only to a limited number. In particular instances, prejudice or preference denies employment on grounds of sex, age, race or nationality, in spite of skill. Thus the chart may be somewhat misleading as to the degrees of skill which are actually available as a resource to be used. It is useful, however, as a rough guide to the characteristics of the available manpower in terms of skill.

So far the available manpower has been analyzed as of 1930. Actually it is changing through time with changes in the size and age distribution of the population and with the trends of social change. Chart VI shows the total number of persons between 20 and 65 years of age from 1850 to the present and estimates of the number of persons likely to be in this age bracket up to 1980. The estimates are based on the assumption of neither the highest probable nor the lowest probable birth and death rates but represent medium estimates.[4] Though the peak of population on the basis of the estimates used here would come in the 1970's, the peak of manpower in the more productive ages is likely to come in the 1960's. The changing composition of the population is shown in chart VII. From the point of view of production, the age composition of the population has been steadily improving, only 45 percent of the population being between 20 and 65 in 1850 and over 58 percent being in that age bracket now. Further decline in birth rates seems likely to increase the proportion slightly further, though the proportion of persons between 20 and 44 is likely to be declining, throwing a greater weight of production on persons between 45 and 64.

More important than the change in the size and age grouping of the population, are the trends of change in social attitude toward, and opportunities for, employment on the part of children, old people, and women. When Alexander Hamilton wrote his famous report on manufactures in 1791 he assured the Congress that manufactures could be developed without withdrawing men from agriculture because they could use the untapped labor resources of women and children. The first factories operated upon this principle. In 1814 a New England textile manufacturer advised that the most efficient mill construction provided one large room rather than several smaller ones because that made it possible to have only one adult in the plant—a single supervisor. Measured in terms of 125 years ago the manufacturing manpower of the nation was to a considerable extent the child power. Today child power is still a minor part of the manpower in agriculture but it no longer constitutes a significant part of the manpower in industry. In 1930 4½ per-

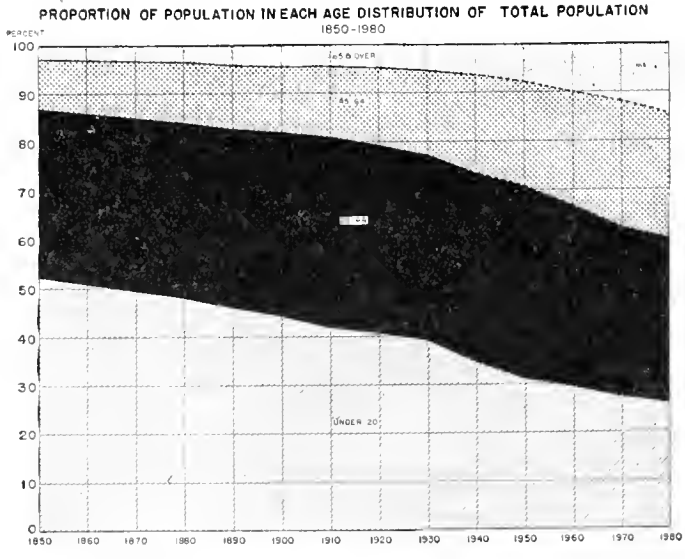
CHART VI




Source: Based on *Fifteenth Census of the United States: 1930, Population*, volume II, page 576; and *The Problems of a Changing Population*, 1938, National Resources Committee, page 25.

[4] National Resources Committee, *The Problems of a Changing Population*, 1938, p. 25.

CHART VII




Based on *Fifteenth Census of the United States: 1930, Population*, volume II, page 576; and *The Problems of a Changing Population*, 1938, National Resources Committee, page 25.

cent of workers in agriculture were under 16 years, whereas in no other line of work did child workers amount to as much as 1 percent of the labor force.

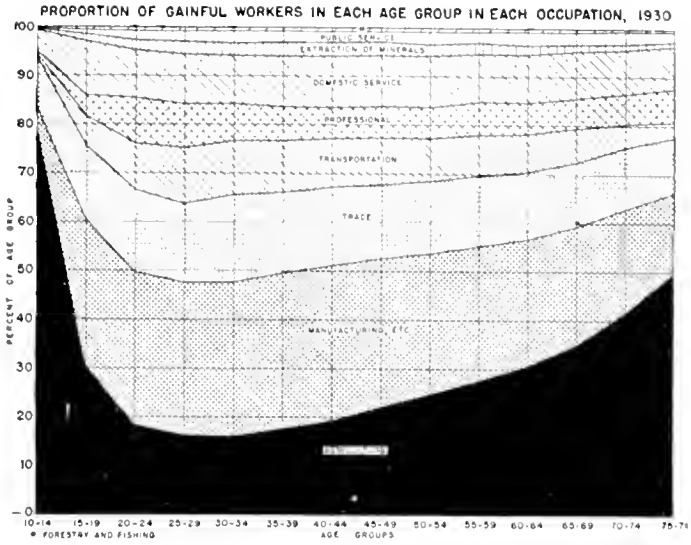
The tendency to eliminate child labor from industry and to retain it in agriculture is part and parcel of the process of industrial development which has drawn a sharp line between employment and lack of employment in industry where no such sharp line exists in agriculture. In agriculture the whole family has tasks to perform, running all the way from chores around the barnyard to a heavy day's work ploughing in the fields. This allows individuals to become fully productive through a gradual process of participating in the work of the farm, first in minor and then in major activities. A child worker on the family farm is not usually a full-time producer. On the other hand, in industry and in certain agricultural processes where hired labor is used, a child worker is usually a full-time employee. In the highly organized processes of production outside the home there has ceased to exist the gradual process of inducting individuals into the productive system which characterizes agriculture.

At the opposite end of the age scale, industry and agriculture again differ in the ability to adjust to the capacities of older workers. On the farm an individual's work tapers off toward the end of his life just as it develops gradually in his early years. A farmer may continue to work around the farm after his son takes over the heaviest burden, or may employ a hired man to work under his management. The practice in different industries varies as to the age at which older workers are retired but the break from employment to unemployment is likely to be sharp.

This difference between agriculture and industry is clearly brought out in chart VIII which indicates for each age group the proportion of the gainfully occupied attached to each major branch of industry. In this chart agriculture stands out in sharp contrast to other fields of activity in the occupation of persons under 20 while agriculture and the professional services stand out in the occupation of persons over 60. Although the bulk of employees in all fields are between 20 and 60 years of age, 28.5 percent of all the gainfully employed in agriculture were under 20 and over 60 as compared with 15.7 percent in manufacturing. More striking is the fact that the great bulk of employed persons in the very young and the very old age brackets are to be found in agriculture rather than in manufacturing and mining.

The increasing industrialization of economic activity, together with recognition that industry does not provide for a gradual induction into industry and gradual retirement, has brought strong social pressures against child labor and in favor of retirement pensions so that the age span from which manpower can be drawn is

CHART VIII




Source: Based on *Fifteenth Census of the United States: 1930, Population*, volume V, page 116.

gradually narrowing. The work of children in industry has been very largely eliminated, a development accelerated by the heavy unemployment of recent years, while the development of old age pensions and social insurance gives prospect of reducing the number of older persons forced to seek employment. In the railway industry, for example, where it has been the policy to retain older workers on a seniority basis, there were hundreds of men in the seventies running the trains and even some over 80 when the railroad retirement act went into effect.[5] In this case the introduction of a pension system for men over 65 permitted the withdrawal from industry of men who were too old to remain but who continued to work because of economic pressure. If these trends continue, the manpower of the country will more and more be restricted to those age groups well able to bear the burden of national production.

An estimate of the total available labor force, taking all these factors into account, is given in chart IX, together with the actual employment from 1920 through 1936. The difference between the labor force and the equivalent of full-time employment represents a crude approximation to the number of persons unemployed, indicating the extent to which the resource of manpower is not used.

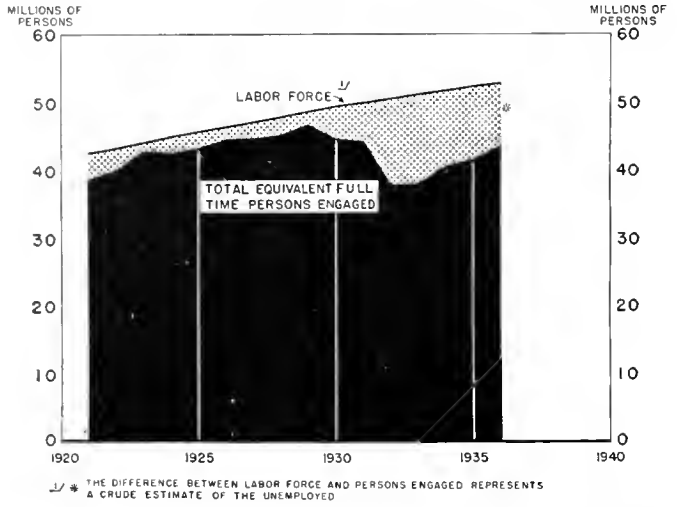
### Nonconsumable Resources

With these three resources which are consumed in the process of satisfying wants—natural resources, plant, and manpower—there must also be considered the three great resources which condition production without being consumed in the process—physical environment, technology and social institutions.

[5] *Annual Report of Railroad Retirement Board*, 1938.

CHART IX

TOTAL PERSONS ENGAGED AND LABOR FORCE 1921-1936




Source: Total equivalent full-time persons engaged is based upon data of the National Bureau of Economic Research and the Department of Commerce. Total labor force is based on preliminary estimates furnished by the Works Progress Administration, National Research Project. For the actual data, see table I, of Appendix I, of the report of the National Resources Committee, *Patterns of Resource Use.*

### Physical Environment

Physical environment as a resource conditioning production requires little discussion. The varying and on the whole favorable climate of the United States is in a very real sense one of its richest resources, with temperatures ranging from those necessary for the growing of cotton and citrus fruit to those suitable for spring wheat and fur-bearing animals, and a rainfall ranging from desert dryness to the heavy rainfall of the Pacific Northwest and the Atlantic Coast. The topography of the country, too, is on the whole favorable. Open land without insurmountable mountain ranges, open sea fronts with plentiful harbors, great lakes, and navigable streams provide a setting for the productive activity of the country's 50 million workers.

### Technology

The second great resource conditioning production is the existing technology—the knowledge of ways to apply manpower to physical resources for meeting human wants. Modern technology is the product of centuries of trial and error, of selection and adaptation. Each effective technique, whether physical or social is a tried and effective way of doing something, of acting to attain a given end, of getting from here to there. As such, it is a resource no less than the physical materials to which it is applied and the human skill and energy which apply it. Personal skill alone does not insure productivity. Often unskilled use of the best technique is more productive than skilled use of an obsolete technique. Unskilled but intelligent use of a steam shovel can be more productive than the most skilled use of pick and shovel. Understanding of the best known way of doing things can make the difference between a high and a low level of living. The Indians on this continent had much the same natural resources as exist today and had great personal skills, but they did not have modern techniques.

By its very nature technology is a resource which cannot be measured. Whether a new technique is the result of the inventor's imagination or the recognition of a fortunate chance event, the time between the initial step and the adoption of a method as a common practice may be a matter of generations. At any given time, knowledge and skills, and their implementation in different fields, is at all stages from imagination or recognition to routine practice. It may be possible to trace for any particular technique the steps from the mind of the inventor or discoverer on. It is also possible to recognize, in the place held by science and the energy devoted to research, conditions favorable to the further development of techniques. But it is not possible to reduce to a common measure and express in meaningful terms the total technological resource of the country at a given time.

Yet modern technology is at the very heart of the basic economic problem of the day. Mass production, rapid transportation and communication, improved techniques of management, and mass financing are as characteristically modern as the automobile, the radio, and the talking movie. Both reflect modern techniques and typify modern production.

### Social Institutions

Social institutions are a resource to which people are so accustomed that they seldom think of them in this light and often are unconscious even of their existence. Yet almost every productive act is conditioned by a complex of social institutions which have developed in the past. Without this complex of social institutions social living would be almost impossible.

In this chapter an attempt has been made to bring into focus the resources of the Nation. We have ample natural resources with no significant limitation except that involving tropical products; extensive plant, but plant which could be rapidly replaced if occasion arose; a labor force of over 50 million persons with varied skills and aptitudes only partly employed; an equable climate; effective techniques of production; and a complex of social institutions which bind the whole population into a functioning economy. It is not for lack of consumable resources that consumer wants are not more extensively satisfied. Nor is it due to unfavorable climate or to ineffective production techniques. The extent to which it arises from faulty organization of production will be considered in the third section of this report after the structure of production has itself been examined.

# CHAPTER IV.—THE STRUCTURE OF PRODUCTION—GEOGRAPHICAL STRUCTURE

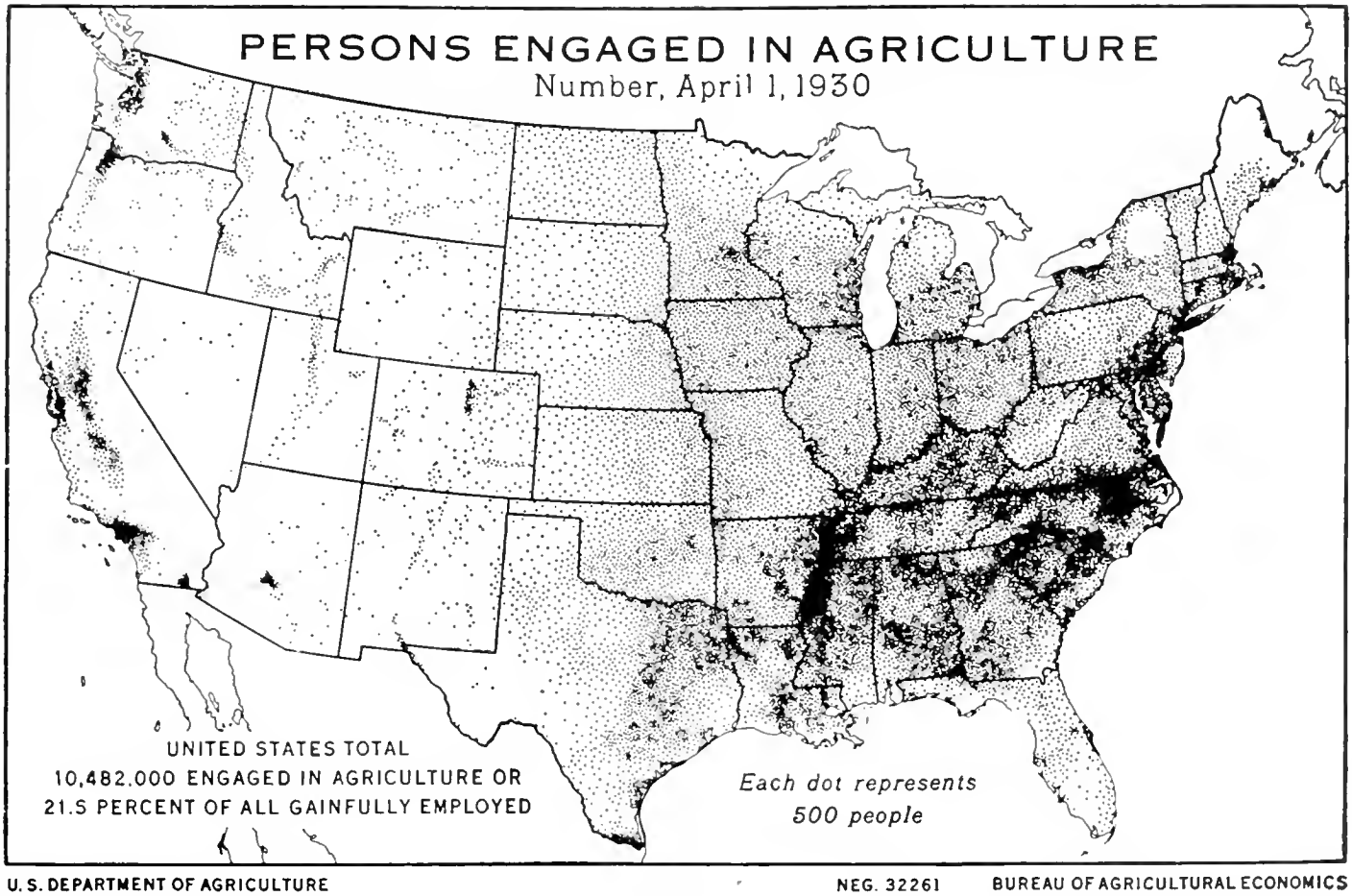
The two preceding chapters have sketched the structure of wants and of resources, the two elements basic to the process of production. In this and the following two chapters, the structure of production itself will be blocked in, first in terms of its geographical characteristics, then in terms of the functions performed, and finally in its financial aspects.

### Location of Production in Relation to Resources and Consumers

The geographical structure of the American economy reflects three factors: The location of resources, the location of consumers, and the historical process by which economic activity has been carried on in the past. If there were complete mobility of people and capital, the location of resources might be the major, if not the sole, geographic factor giving structure to the economy. But neither labor nor capital has ever been completely mobile and the inertia of both exerts a major force in giving to economic activity its geographic form. The net result of these factors, operating in the past and the present, appears in the distribution of population and more particularly in the distribution of purchasing power shown in chapter II, maps 1 and 2. The fact that consumers are distributed according to a geographical pattern of their own, at least partially independent of the distribution of natural resources, produces a situation in which they, equally with natural resources, constitute a basic element underlying the geographical structure of economic activity.

The geographical distribution of the principal lines of economic activity is shown in maps 1–5. Farming and mining are necessarily attached to the natural resources which they exploit. The distribution of land suitable for crops and for pasture [1] was a major determinant

[1] See ch. III, maps 3, 4, and 5.




MAP 1

of the location of all economic activity in the days when the country was predominantly agricultural, although even then physical barriers to population movement and the historic process of settlement had produced a pattern of economic activity which by no means exactly followed the distribution of land resources. Today the soil remains the resource to which are attached the largest single blocks of population and of economic activity. An examination of map 1, however, and especially a comparison of the distribution of agricultural population shown there with the distribution of crop land shown in chapter III, maps 3–5, indicates that the distribution of agricultural population does not correspond closely to the distribution of valuable agricultural land. Rather, the heaviest concentration of agricultural population is in the southern areas where land resources are less adequate than in the Middle West. A secondary concentration of persons engaged in agriculture appears in the Middle Atlantic and the northeastern areas where intensive use of the land for truck farming, dairying, and poultry raising is induced by the presence of city populations and city markets. In the distribution of agricultural activity there is thus reflected not only the distribution of natural agricultural resources but the distribution of consumers and the historical process which has produced a relatively immobile population [2] densely located on the limited agricultural resources of the South.

In contrast to farming which is attached to the land, retail trade follows the location of consumers. A comparison of map 3 with the population maps in chapter II (maps 1 and 2) brings out the fact that it is effective consumers, those with purchasing power, who determine the location of trade and other consumer-located activities. The relatively thin employment in retail trade in the South corresponds more closely to the low level of purchasing power in that area shown in chapter II, map 2, than to the high density of population shown in chapter II, map 1.

Manufacturing and wholesale distribution, maps 2 and 4, are not tied directly either to resources or to consumers, but tend to be highly localized in the urban centers, primarily in the northeast section of the country. The degree of such geographical concen-

[2] Although southern farms have been supplying workers to northern and southern industries for decades.

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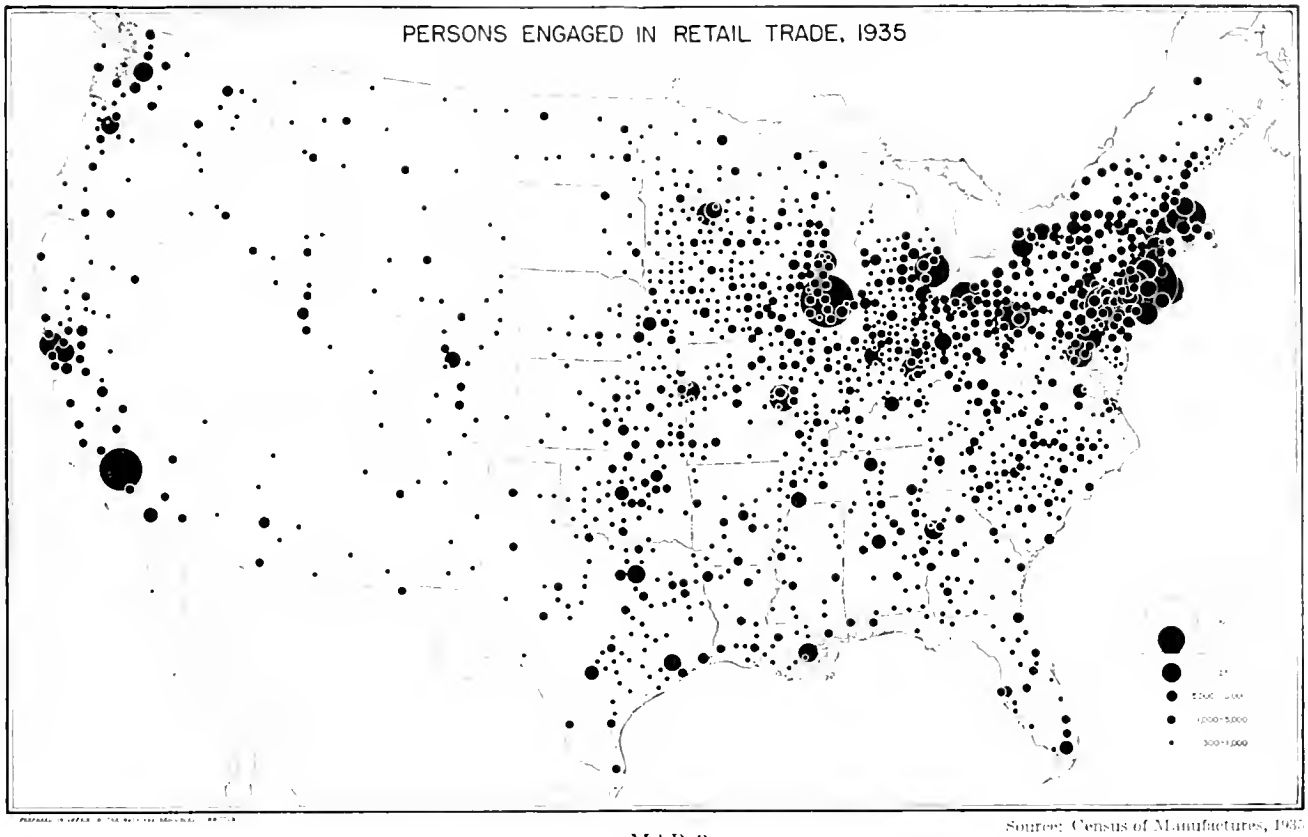
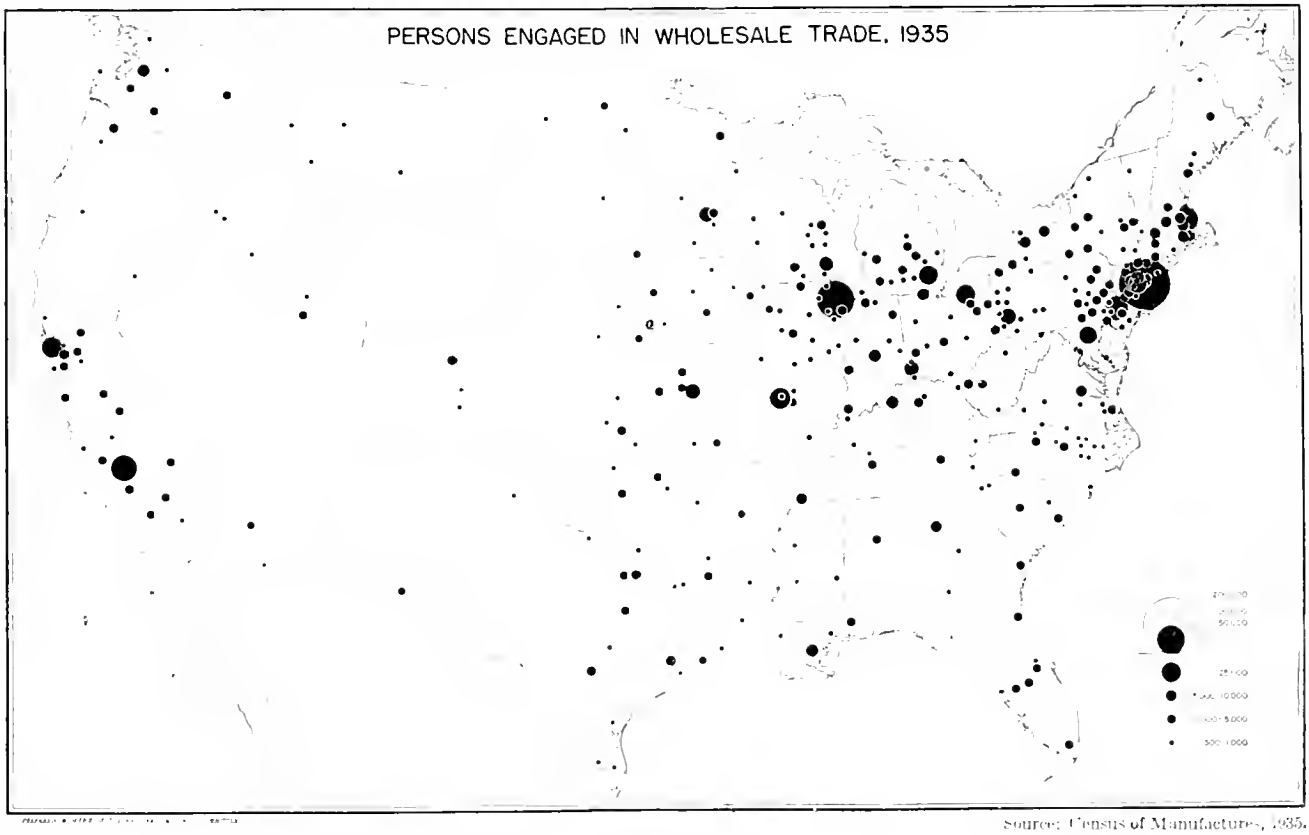
MAP 2




MAP 3

Source: Census of Manufactures, 1935.




MAP 4

Source: Census of Manufactures, 1935.

TABLE I.—*Location of persons employed in relation to resources and consumers, 1935*

| | Number of Persons (thousands) |
|---|---|
| Located close to resources: | |
| Agriculture | 9,925 |
| Fishing | 65 |
| Mining | 745 |
| Manufacturing [1] | 743 |
| Total | 11,478 |
| Located close to consumer: | |
| Services to consumer | 6,563 |
| Services to the economy [2] | 6,346 |
| Services to business | 252 |
| Retail trade | 4,970 |
| Construction | 719 |
| Manufacturing | 887 |
| Total | 19,737 |
| Relatively footloose: | |
| Wholesale trade | 1,350 |
| Manufacturing | 6,881 |
| Miscellaneous | 1,965 |
| Total | 10,196 |
| Total | 41,411 |

[1] Including sawmill and timber workers.

[2] Including Federal, State and local Governments. Federal Government employees located in Washington and some State employees in State capitals are not located close to consumer.

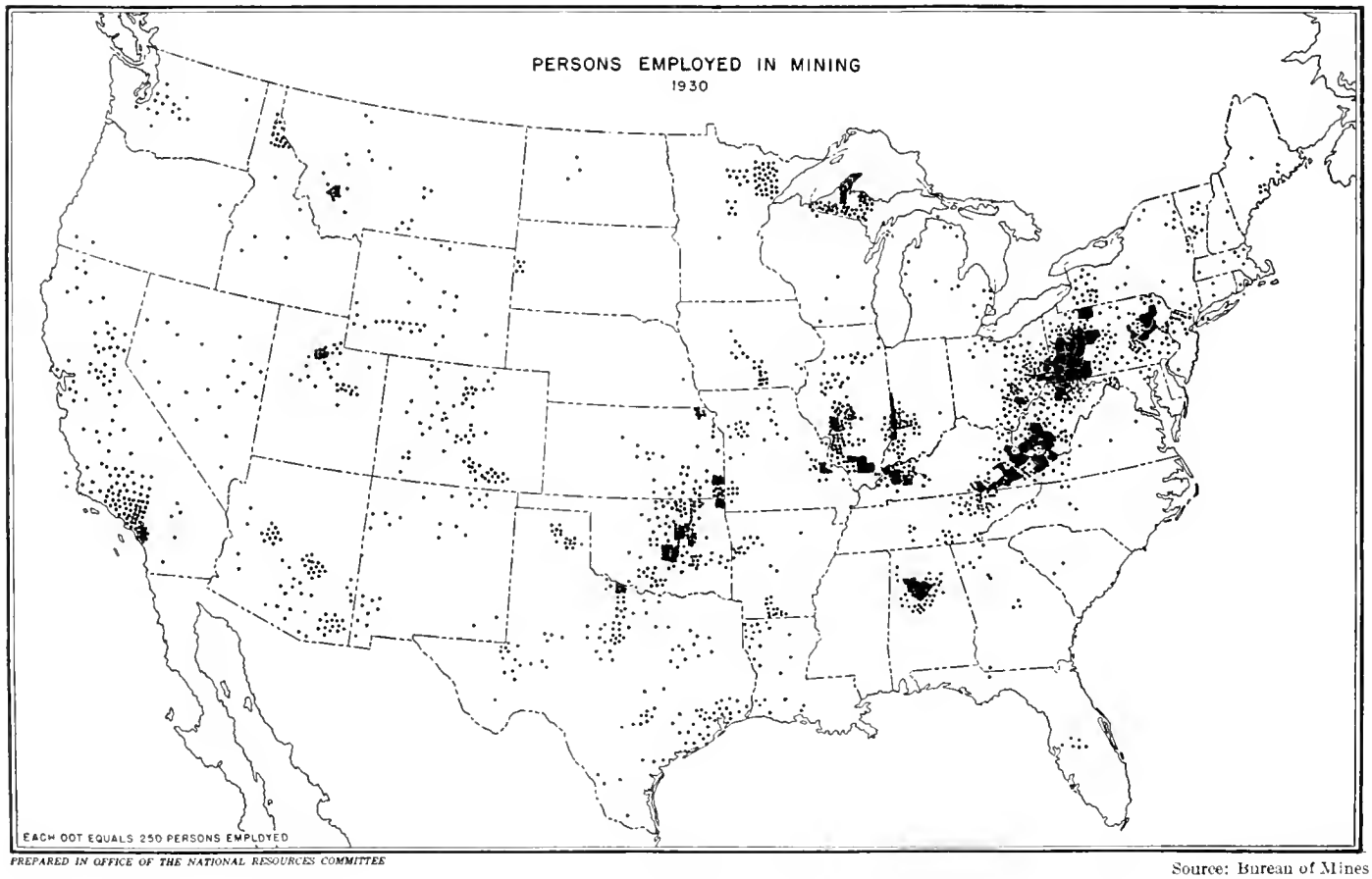
tration is emphasized in map 6 which shows the manufacturing population of the 200 counties in which 75 percent of all manufacturing activity is carried on.

The approximate proportions of persons engaged in the various activities whose location is primarily determined by resources, consumers, or neither, are indicated in table I. Approximately 28 percent were located close to resources, 48 percent close to consumers, and 24 percent were relatively footloose.

The above series of maps covers 61.6 percent of the persons employed in all types of activity. Satisfactory maps for construction and service could not be obtained. The latter would closely approximate the distribution of population and of purchasing power shown in chapter II, since services must of necessity be carried on close to the consumer.

In maps 7 and 8 the flow of goods from points of production to points of consumption is indicated in terms of the railroad freight traffic passing from one

Source: *Patterns of Resource Use*, National Resources Committee, tables 1 and 2. For the classification of manufacturing industries, see appendix 8, table 1.




Source: Bureau of Mines

MAP 5

freight area to another on a given day. This represents only about a third of all freight shipments, for the bulk of freight, as indicated in table II, passed between points within these areas; motor transport of goods also involved mainly short hauls. Water transport also accounts for important flows, particularly of ore and wheat. The flows shown are between the freight areas indicated by the dotted lines, not between the points where the arrows originate or terminate. Interregional shipments of freight, however, indicate roughly the direction and magnitude of the long-distance flows of goods.

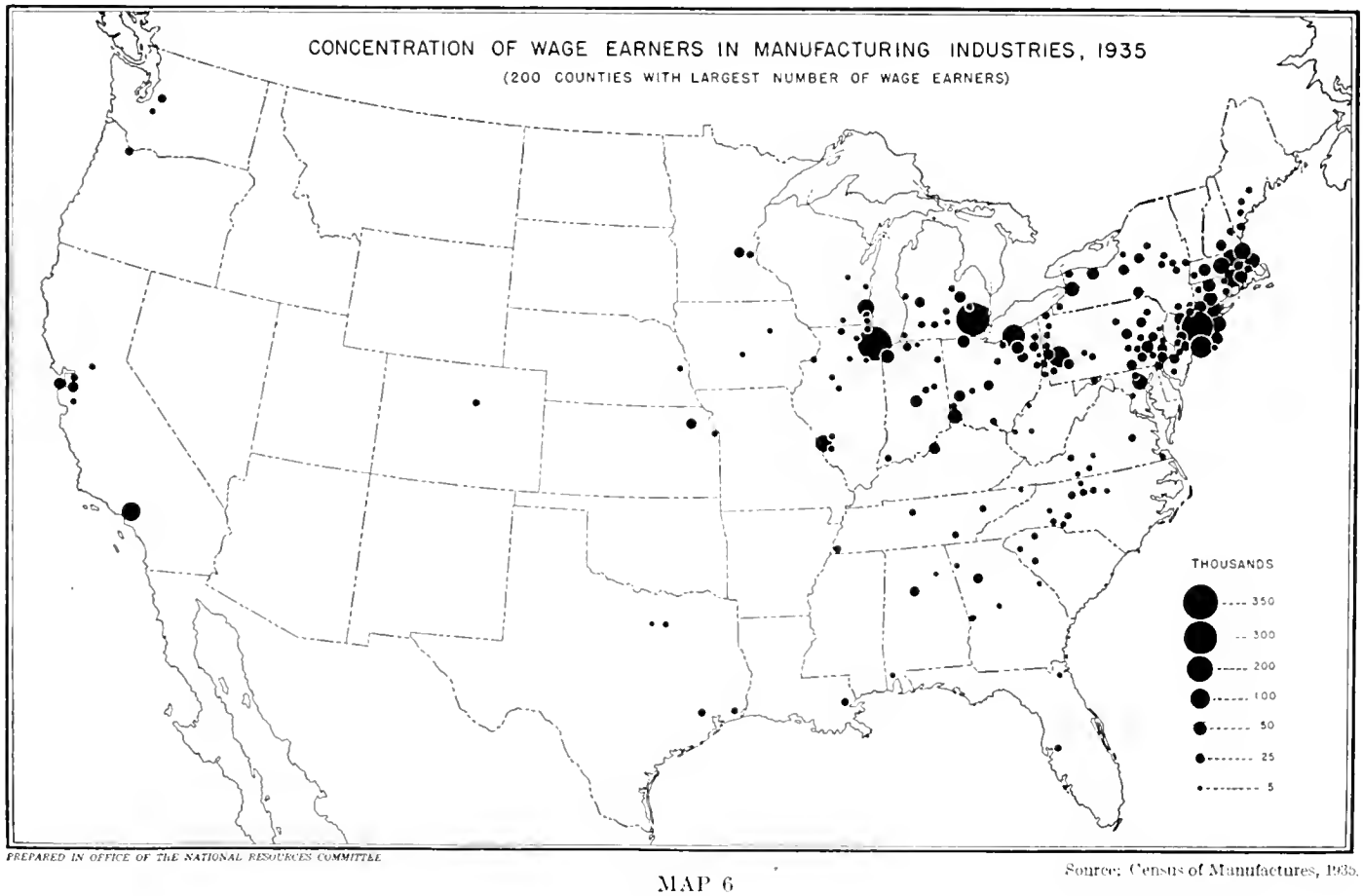
The major elements that enter into the pattern of industrial location are typified in the four examples of manufacturing activity shown in maps 9 to 12. In each of these examples, the principal influence determining location is different. Certain types of industrial activity, as well as the extractive processes, must be located close to the natural resources. Map 9, showing the location of cottonseed oil manufacture, illustrates this type of activity. The processing of products extracted from soil or mines tends in general to take place close to the resources themselves, especially where the product is perishable, e. g., in the canning of fresh vegetables and quick freezing of berries and fruits, and where the product is bulky and is reduced in bulk or weight by the fabricating process, e. g., lumber mills which reduce the weight and bulk of timber by the amount of waste and sawdust.[3]

TABLE II.—*Proportion of freight carload traffic for intraterritorial and interterritorial shipments, Dec. 13, 1933*

| Origin territory | Total | Intraterritorial | Interterritorial | |
|---|---|---|---|---|
| | | | Western flow | Eastern flow |
| New England | 100 | 74.8 | 25.2 | ..... |
| Trunk line | 100 | 77.2 | 15.9 | 6.9 |
| Central freight | 100 | 66.9 | 17.0 | 16.1 |
| Pocahontas | 100 | 35.0 | 33.6 | 21.4 |
| Southern | 100 | 68.2 | 5.7 | 26.1 |
| Western | 100 | 63.5 | 6.4 | 30.1 |
| Southwestern | 100 | 62.3 | 17.3 | 20.4 |
| Pacific northwest | 100 | 61.6 | ..... | 38.4 |
| Pacific southwest | 100 | 65.7 | ..... | 34.3 |
| Total | 100 | 65.9 | 15.5 | 18.6 |

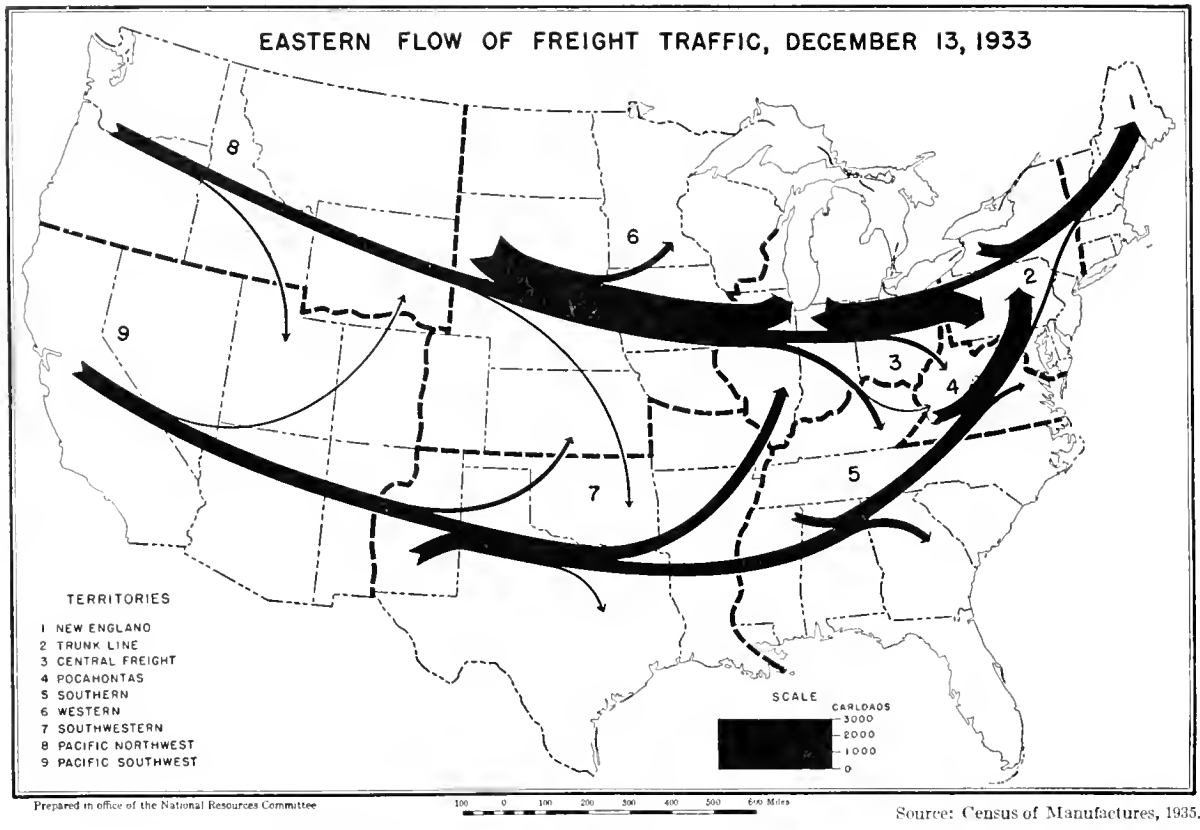
Source: Interstate Commerce Commission, Freight Traffic Report, Dec. 13, 1933.

[3] See appendix 16, maps A–15, A–40, A–42. All bulky or heavy products are not necessarily processed close to the resource, for it is the difference in transportability of the unprocessed and processed product which is involved since the processed product has to travel on to the consumer. The tendency to locate automobile assembly plants in consumer centers reflects a situation in which the product becomes more bulky in the process of fabrication and transportation is easier prior to the fabrication of the finished product than it is subsequently.



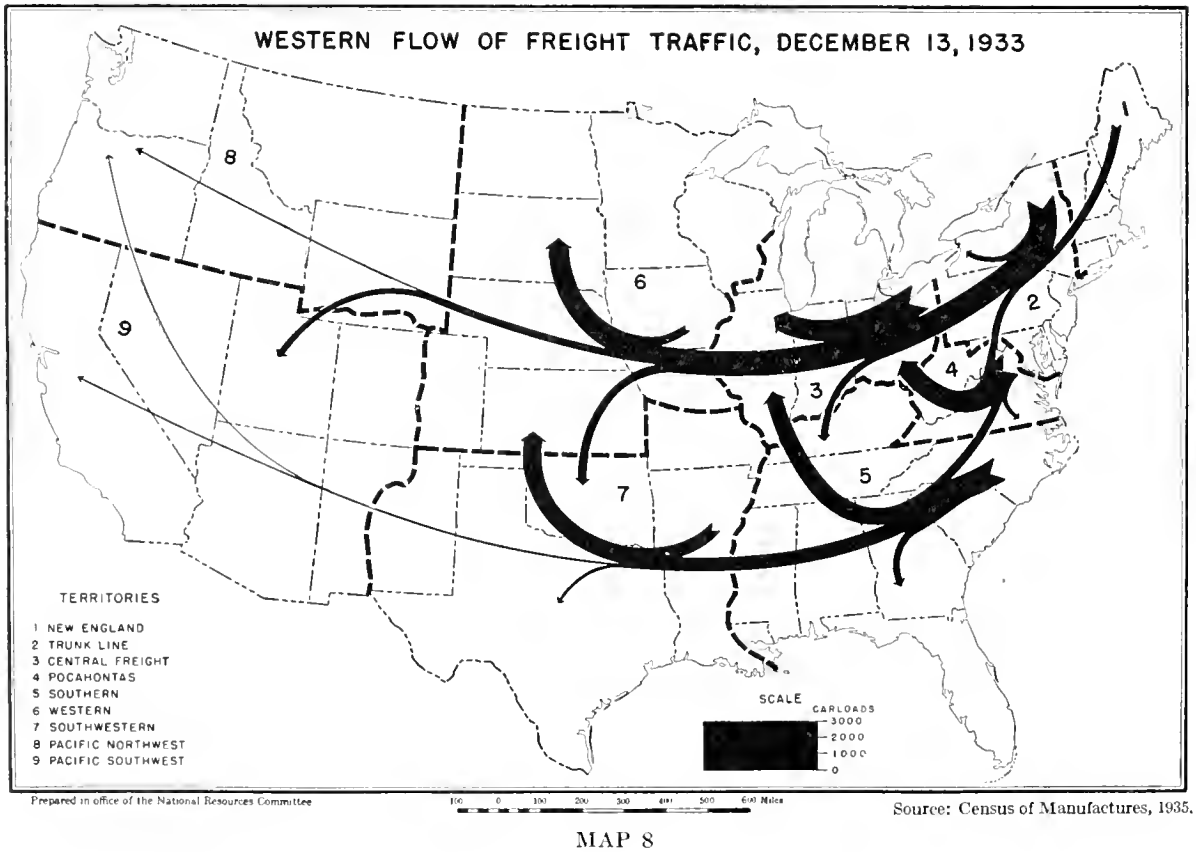

MAP 6

Source: Census of Manufactures, 1935.



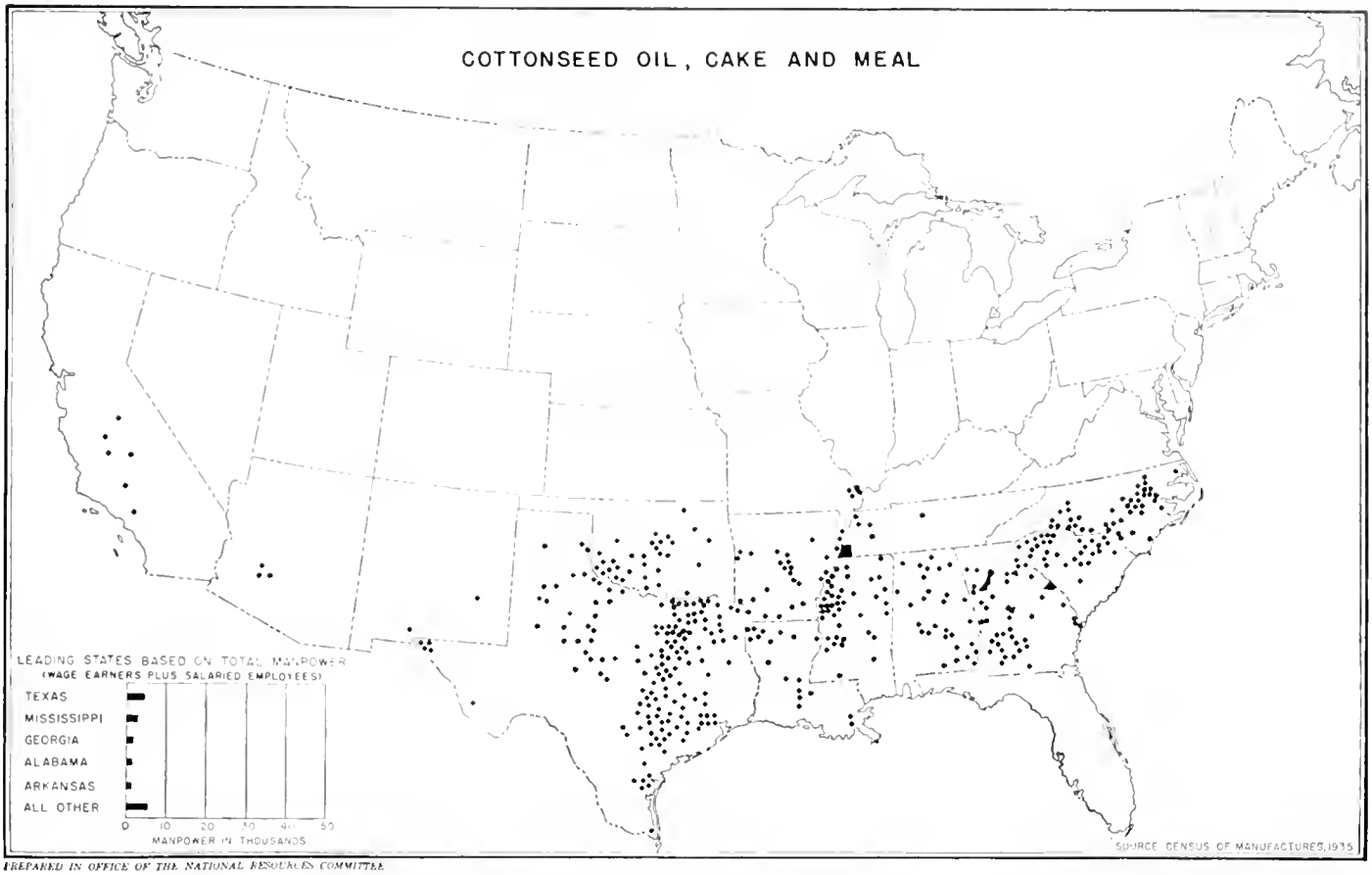

Source: Census of Manufactures, 1935.

MAP 7




Source: Census of Manufactures, 1935.

MAP 8

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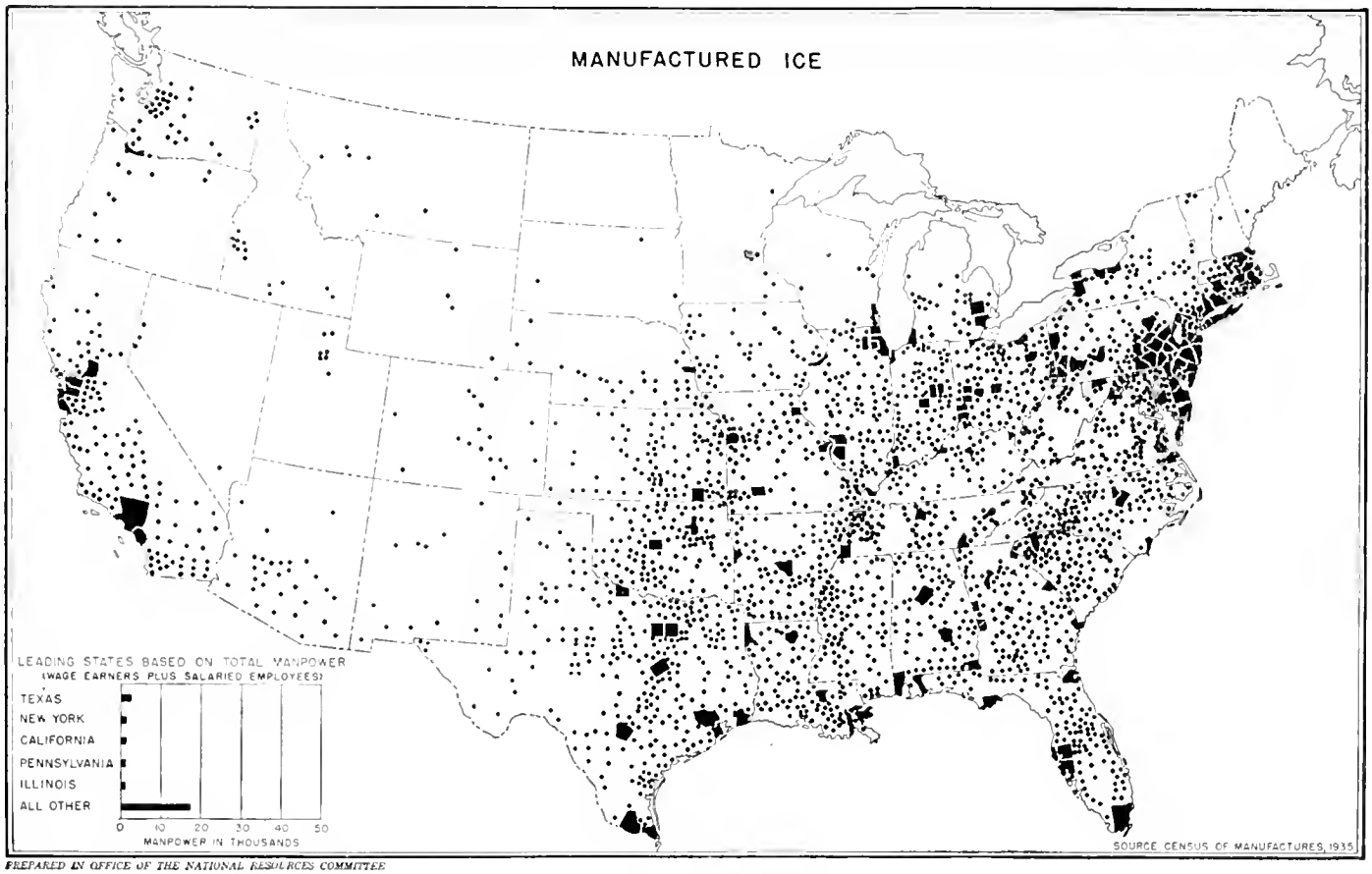
MAP 9

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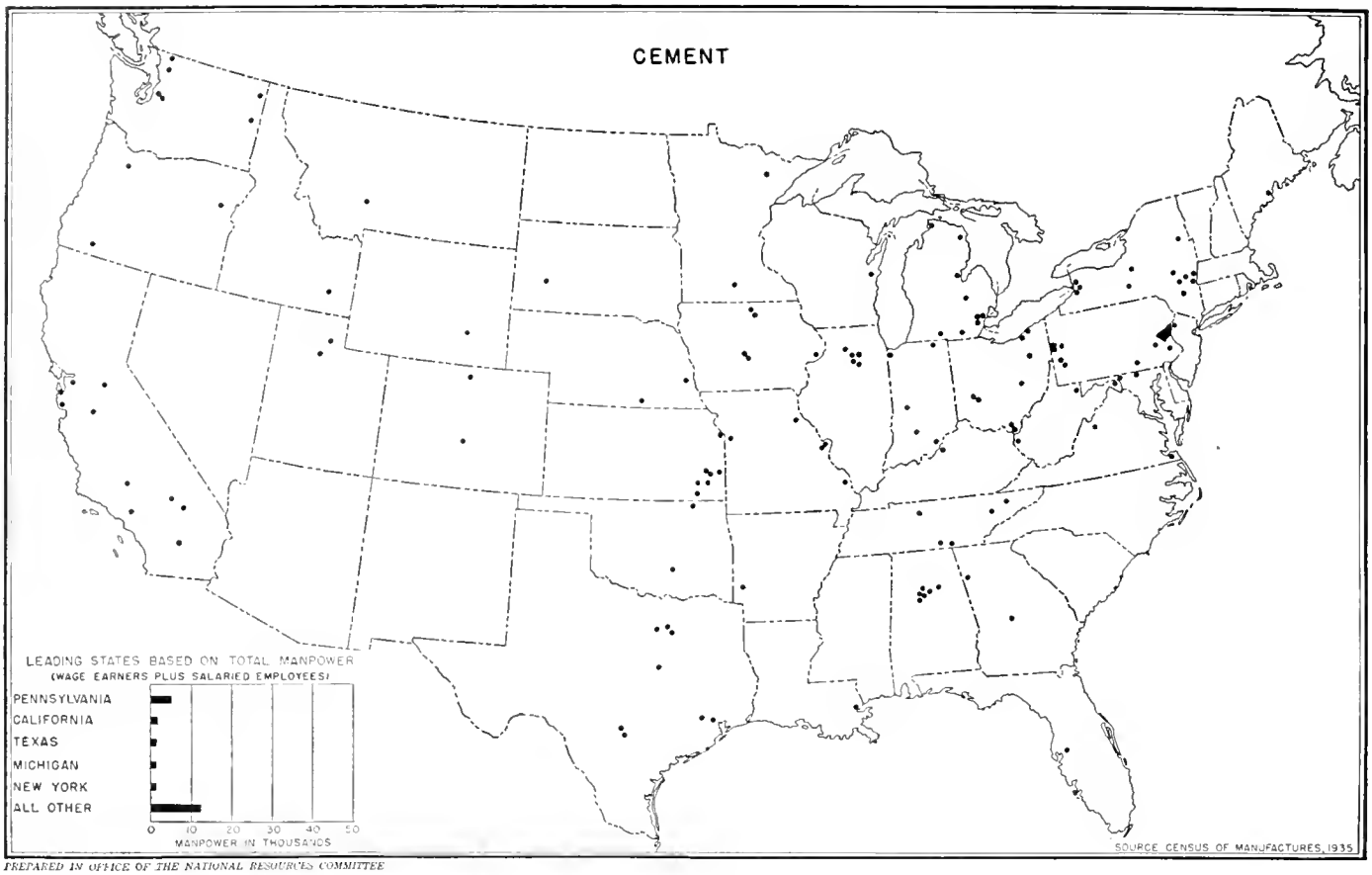
MAP 10

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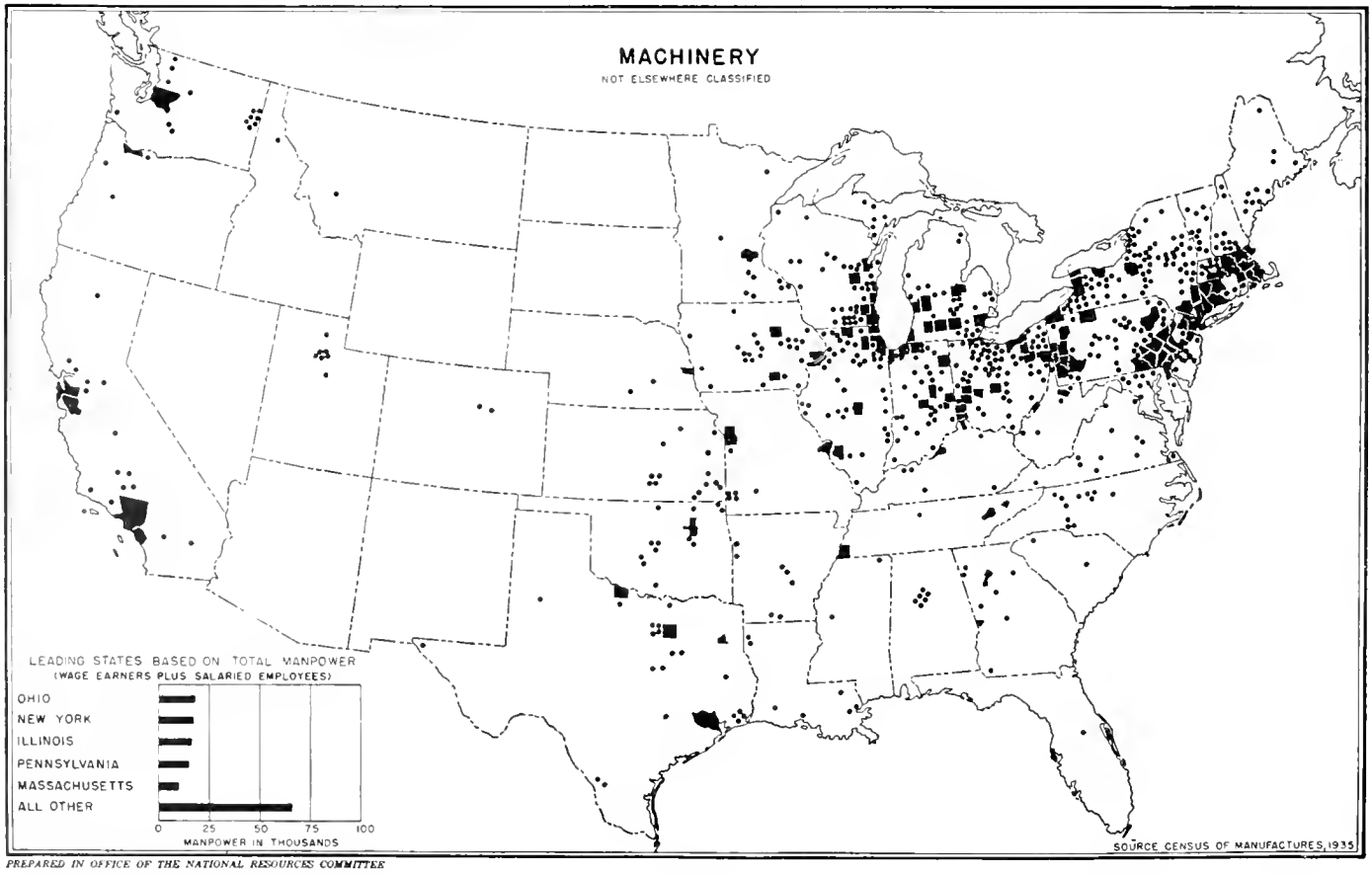
MAP 11

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MAP 12

At the opposite extreme from industries which are tied to the resources which they use are those which are tied to the consumer. Map 10, showing the location of commercial ice manufacture, gives an example of this type of activity. Direct services to the consumer and retail trade are necessarily most closely tied to the individuals who are served.

A third type of geographical distribution is represented by those industries whose resource material is widely distributed, whose bulk is great and whose destination is the ultimate consumer. Map 11, showing the distribution of cement plants, indicates the type of regional distribution characteristic of this sort of activity. The materials out of which cement is produced are widely distributed. Cement plants exploit these resources largely in relation to the regional market to which the cement is to be shipped. Building bricks are perhaps an even better illustration of this type of geographical distribution. Map A–53 in Appendix 16, showing the distribution of clay products, includes the distribution of brick kilns. Unfortunately the brick industry is not separately reported and its regionality cannot thus be clearly shown

The great bulk of manufacturing activity is intermediate between resources and consumers and follows a pattern of location which is determined by a number of factors in addition to those discussed above. Between the resource and the consumer lie successive steps in fabrication. To a considerable degree, the geographical structure of manufacturing follows the flow of goods from the location of natural resources where extraction takes place through preliminary processing, frequently close to the resource, through successive stages of processing, until a final stage takes place close to the consumer. But historically there has developed the definite manufacturing area of the northeast shown in maps 2 and 5. The manufacture of machinery, shown in map 12, is representative of the types of industry located for the most part within this industrial area. The manufacturing activity carried on in the 2,801 counties outside of this area is very largely of the types illustrated in maps 9–11.

The location of an industry brings with itself the location of industries subsidiary to it. The manufacture of heels and shoe findings clings to the shoe industry, wherever it may be; the manufacture of machinery is closely related to the use of machinery; textile machinery, localized in New England when the cotton textile industry centered there, is now also produced in the North Carolina piedmont in close proximity to the newer textile mills. Where industry is located, there population congregates, and there drift industries which serve the consumer directly, contributing to the further industrialization of already industrialized areas.

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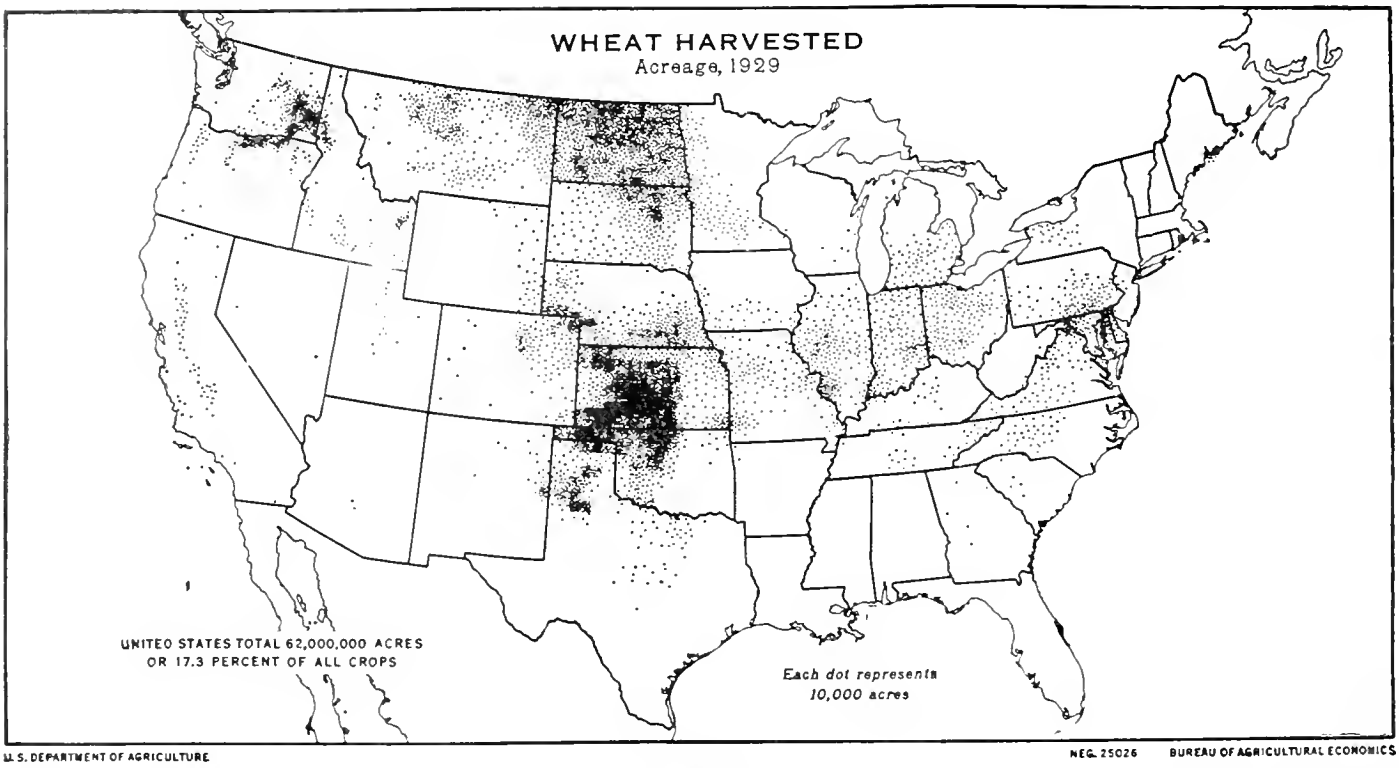
### Flow of Goods from Resources to Consumers

When the flow from resource to consumers in each industry is traced in detail, there emerges a vivid picture of the dynamic aspect of the geographical structure. This flow through successive processing and fabricating stages to the final consumer is shown for selected groups of products in the series of maps which follow. Additional industries are mapped in the same fashion in Appendix 16. These maps show the location of industry, county by county, only on the basis of plant location. The solid areas indicate five or more plants in each of the counties covered. The use of plants as a basis for mapping distorts the picture, for a tiny plant employing half a dozen people is represented in the same manner as one employing 10,000. In order to correct, in part, the misleading impression resulting from this method the five leading States with the number of persons employed are shown on each map.

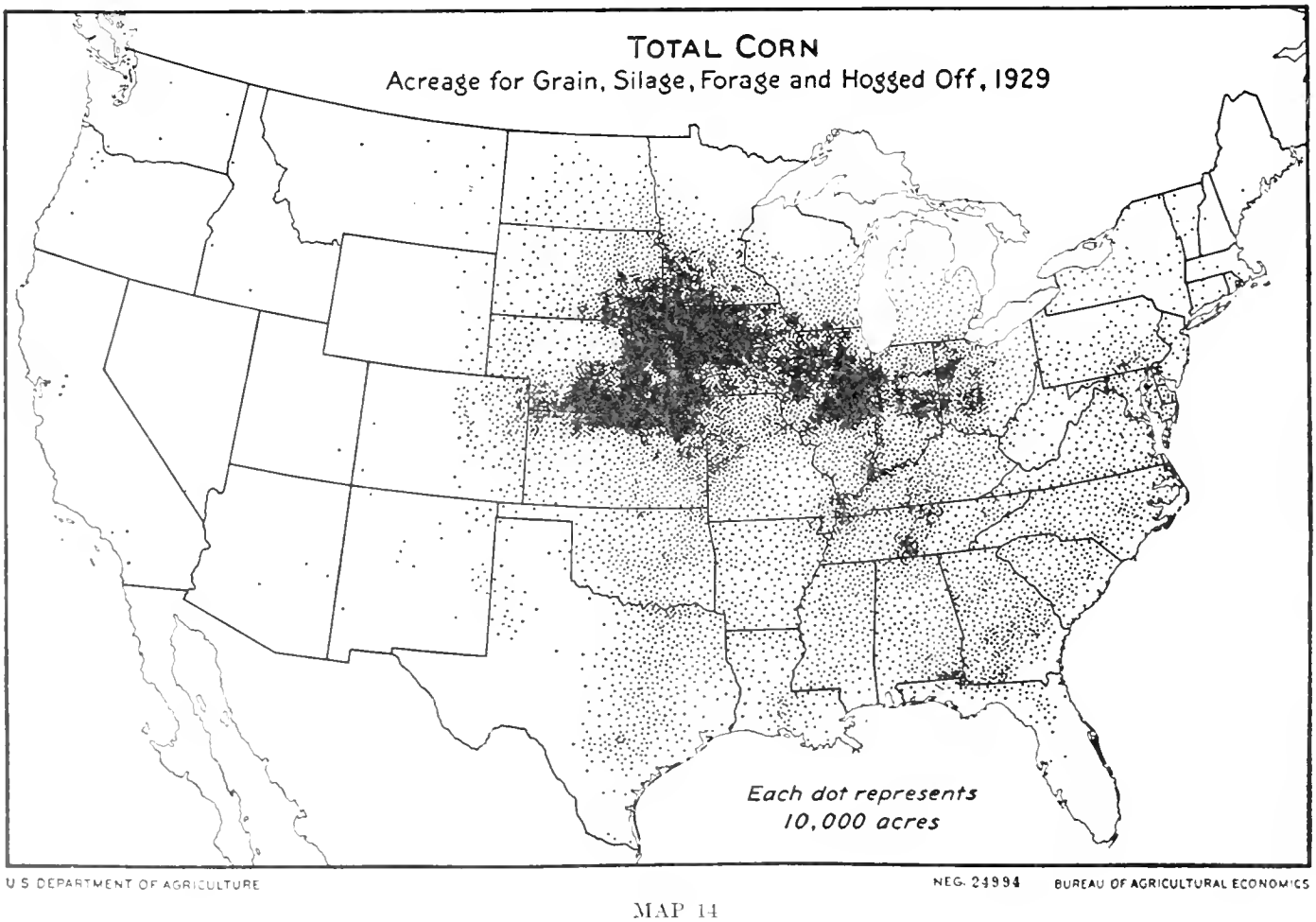
### Agricultural Products

The flow of agricultural products from farmer to consumer is illustrated by maps 13 16, showing the distribution of wheat, corn, flour milling and baking. The major wheat and corn areas stand out in maps 13 and 14. Map 15 shows the processing of these and other grains. The distribution of flour mills close to the wheat-raising areas and of mills scattered through corn-growing regions may here be seen. Flour milling as shown on this map not only represents the processing of two separate products, wheat and corn, but it also represents two separate types of industry, the large commercial flour mill supplying the national market and the local gristmill grinding local grain for local consumption. The many mills scattered through the mountain and piedmont areas of Virginia, North Carolina, and Tennessee are almost entirely of this latter type. The bulk of the employment in the industry and of the value of the product is represented by the States of the Middle Western area and western New York. Bread manufacture, shown in map 16, is distributed through the centers of population. If this map is compared with the population map shown in chapter II, the two appear almost identical with respect to urban areas. Even in the rural areas, moreover, bread manufacture is represented, but here it follows the pattern of rural purchasing power rather than rural population. Commercial bakeries are well represented in the farming section of the West, but in poorer rural areas, especially in the South, baking remains a home industry.

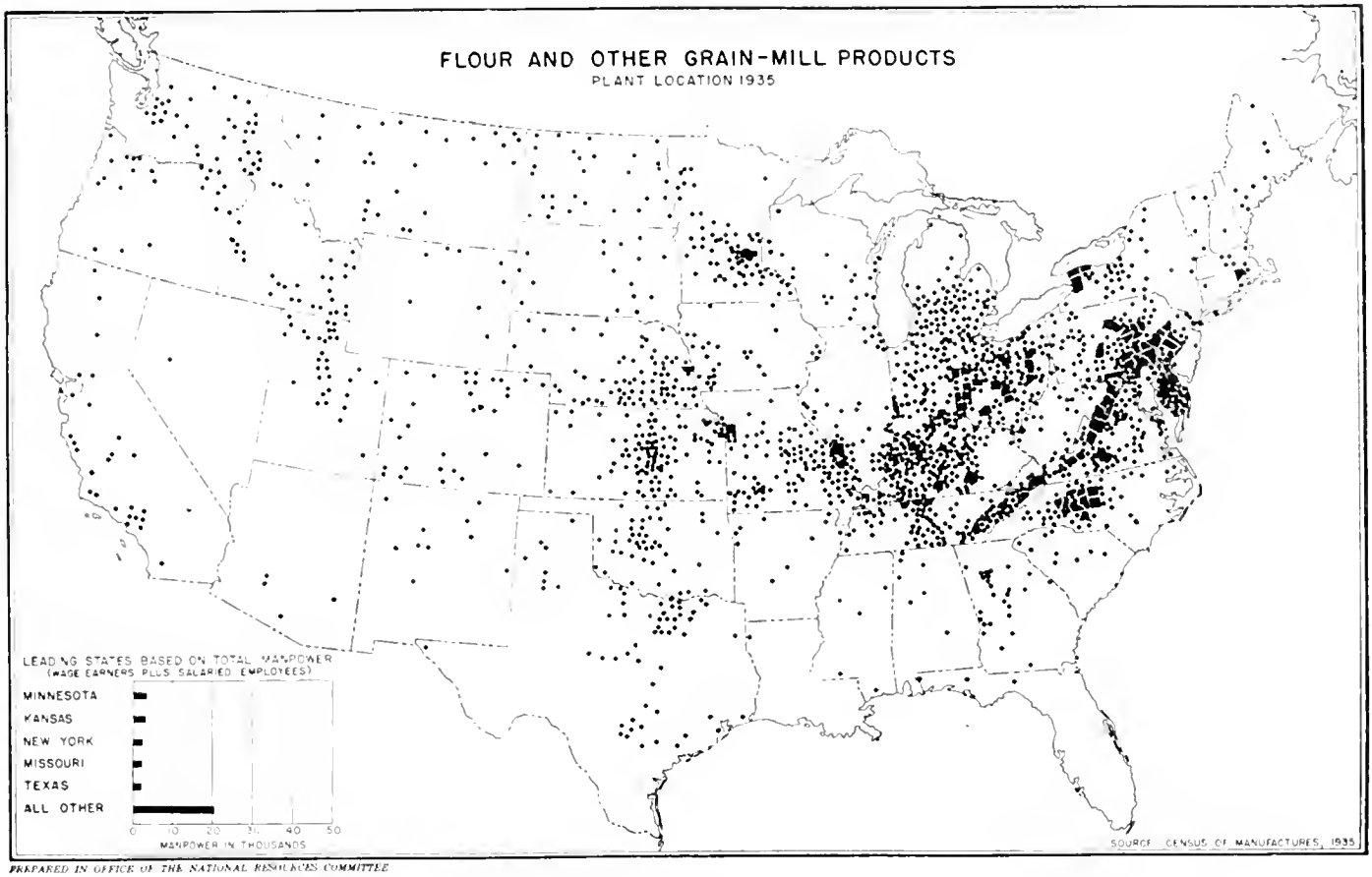
The flows of other agricultural products are shown in the several series for livestock, grains, fruits and vegetables, and tobacco in appendix 16, maps A–1 to A–20.


WHEAT HARVESTED
Acreage, 1929
UNITED STATES TOTAL 62,000,000 ACRES
OR 17.3 PERCENT OF ALL CROPS
Each dot represents
10,000 acres
U. S. DEPARTMENT OF AGRICULTURE
NEG. 25026 BUREAU OF AGRICULTURAL ECONOMICS

MAP 13

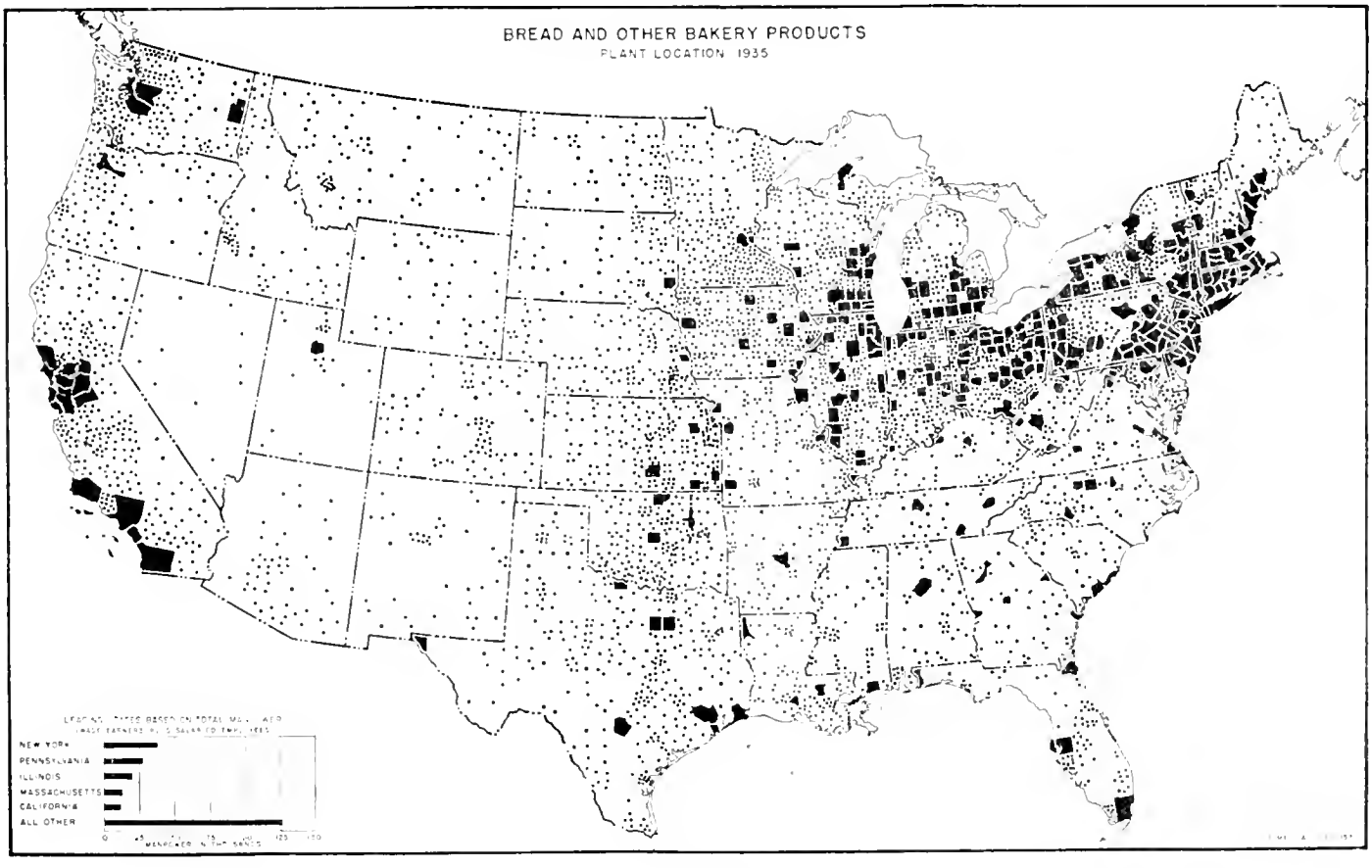

TOTAL CORN
Acreage for Grain, Silage, Forage and Hogged Off, 1929
Each dot represents
10,000 acres
U S DEPARTMENT OF AGRICULTURE
NEG. 24994 BUREAU OF AGRICULTURAL ECONOMICS

MAP 14




*PREPARED IN OFFICE OF THE NATIONAL RESOURCES COMMITTEE*

MAP 15




MAP 16

### Textiles

The distribution of the textile industry, illustrated by cotton textiles shown in maps 17–20, bears only a secondary relationship to the location of resources. Only a scattering of cotton textile plants is to be found in the vicinity of the centers of cotton production. Although the piedmont mills are near to an old cotton raising area, the location of the cotton textile industry primarily reflects the historical development of the industry in New England and its migration to the southern piedmont in quest of a cheap labor supply. Its locational pattern is that of a relatively foot-loose industry bound neither to resources nor to consumers nor yet lying directly along the line of flow from one to the other. Textiles reach their finished stage, for the most part, in clothing. The two main types using cotton cloth are shown in maps 19 and 20. The manufacture of men's cotton garments is very widely dispersed, with plants located in almost every city. Women's clothing, on the other hand, is strongly concentrated in New York. The chart with map 20 showing the States leading the industry in employment brings out the localization of this industry even more clearly than does the map of plant location. A major contributing factor in this instance is the fact that New York has been the style capital of the United States. In these two contrasting garment industries, men's cotton garments and women's cotton clothing, textiles manufactured and finished in the industrial area of New England and the southern piedmont move in the first instance into widely scattered industrial and consumer centers and in the second instance into New York and certain other cities.

Flows through other branches of the textile industry, wool, silk, rayon and their products, may be traced in appendix 16, maps A-21 to A-28. Taken as a whole the textile and clothing industries shown in this series of maps include 21.3 percent of all persons engaged in manufacturing. They account for a much larger proportion of the manufacturing population in the New England area, in the metropolitan area of New York and Philadelphia and especially in the southern States, where they represent 32, 36, and 38 percent respectively of the manufacturing population. To only a very minor degree are they to be found in that part of the industrial area which falls in the Great Lakes States.

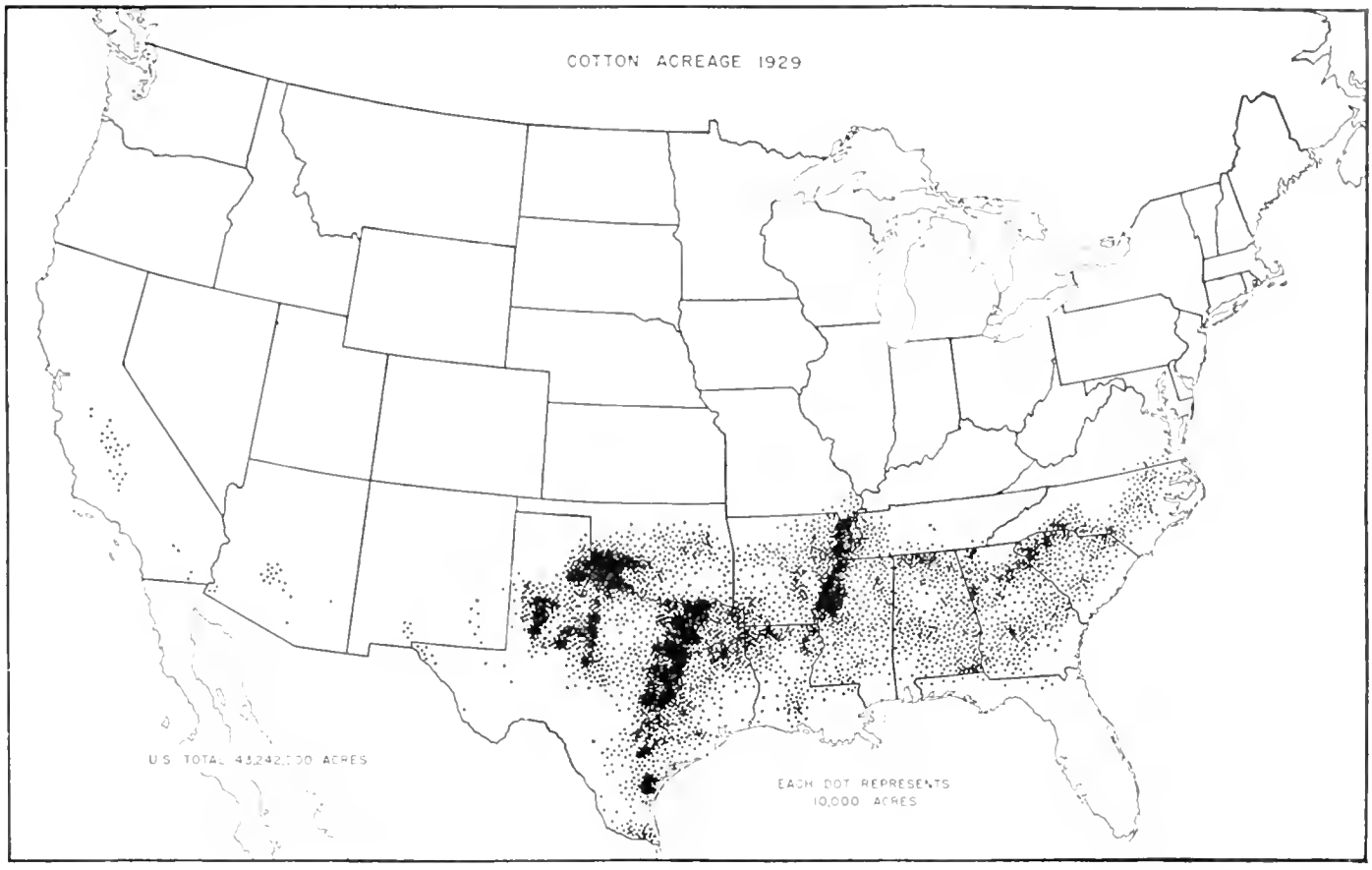
### Iron and Steel

Industries producing iron and steel account for 30 percent of the gainfully employed in manufactures. In the various ramifications shown in maps 21–32, this major industry exemplifies virtually all elements in the geographical structure of American manufactures. In its first stage of mineral extraction and processing it is closely tied to its resource base of iron and coal. Map 24 shows the location of blast furnaces either in the center of the coal and iron fields of Pittsburgh and Birmingham, respectively, or at the points on water routes where coal and iron may be combined in the South Chicago and Gary region, Youngstown, Cleveland, and Buffalo. The remaining blast furnaces shown on the map represent either the remainder of the old forges which used to dot the countryside wherever the many small deposits of iron ore were located, or those that are located in the iron fields of Minnesota and Michigan or the coal fields of Colorado, or near the eastern seaboard and the sources of imported ore.

Blast furnace products move by successive stages toward consumers. Steel works and rolling mills shown in map 25 spread out around the blast-furnace centers. In addition they are to be found closer to the industrial centers of the northeast and scatteredly in the cities which lie along the eastern edge of the Great Plains from Fort Worth and Houston to Minneapolis and St. Paul. The next stage of fabrication represented by stamped and pressed metal products shows industry moving away from the blast furnace centers and spreading out through the industrial counties. At this stage the industry has moved away altogether from the Birmingham center. It has established marked concentration in New England and is strongly represented in the Great Lakes States. The maps of later stages present a very different picture. Sheet-metal works and especially machine shops represent the iron and steel industry in the final processes which are carried on of necessity close to the consumer. To a large extent those branches of the iron and steel industry involve the production of specialty articles on order and the fabrication of iron and steel to meet the particular needs of consumers.

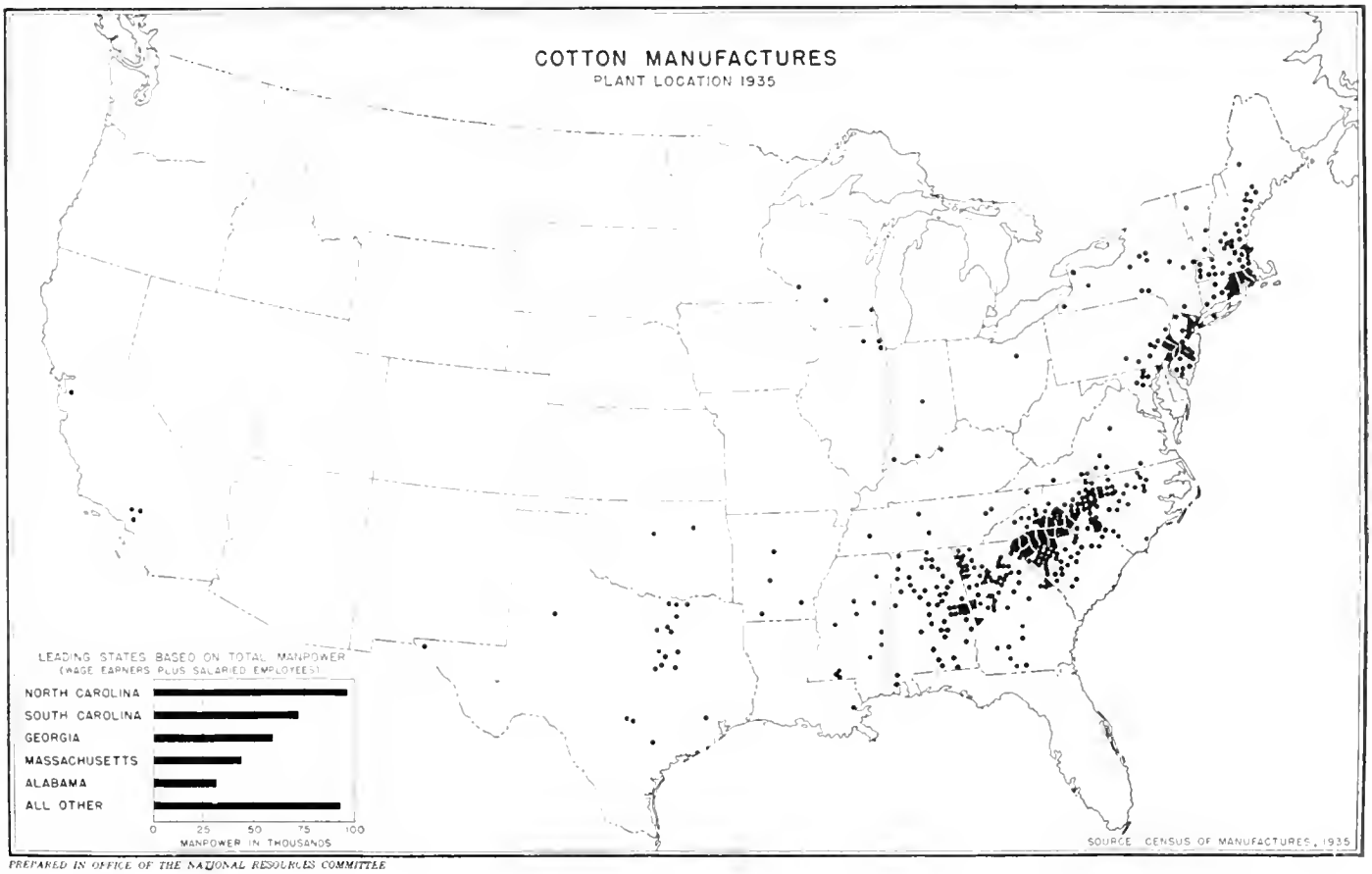
Whereas a large part of the products of blast furnaces and rolling mills moves by successive stages out from the centers localized by the resources toward activity localized by the consumers, a substantial proportion of the industry's products goes into the type of manufacture which characterizes the industrial area. In fact it is very largely the industries fabricating steel which constitute the main industrial area, especially the Great Lakes region. Here is to be found the automobile industry,[4] map 29, and the manufacture of a wide variety of machinery, equipment, and other steel products. In particular, here are located those industries which serve industry itself, notably machine tools, shown in map 30. The other principal steel fabricating industries located in the industrial area are shown in appendix 16, maps A–29 to A–40. Other industries of

[4] Though the map shows a wide scattering of plants, those lying outside of the East North Central and Middle Atlantic States account for only 5 percent of the employment in the industry.




MAP 17

Source: Department of Agriculture

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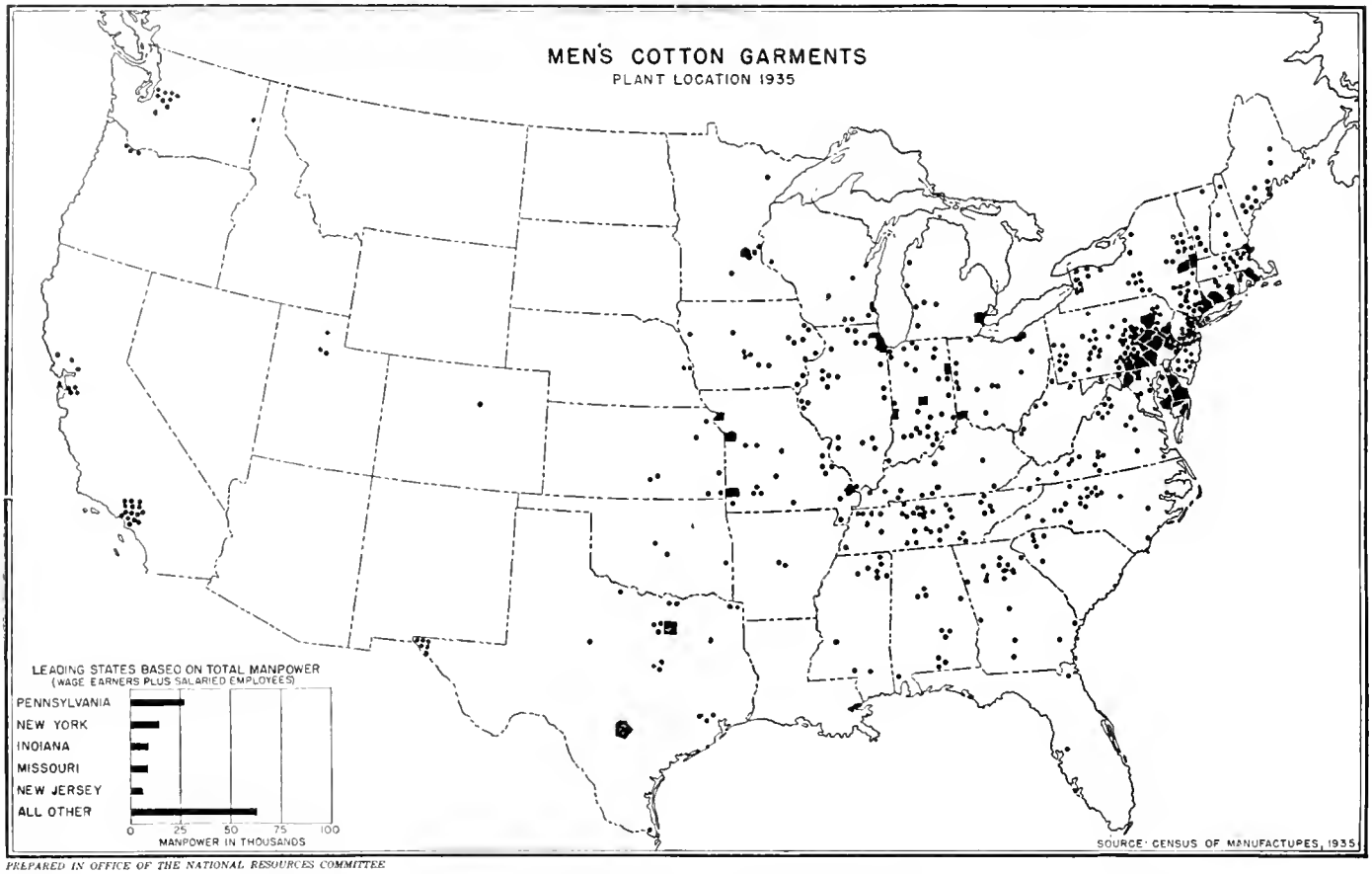
MAP 18

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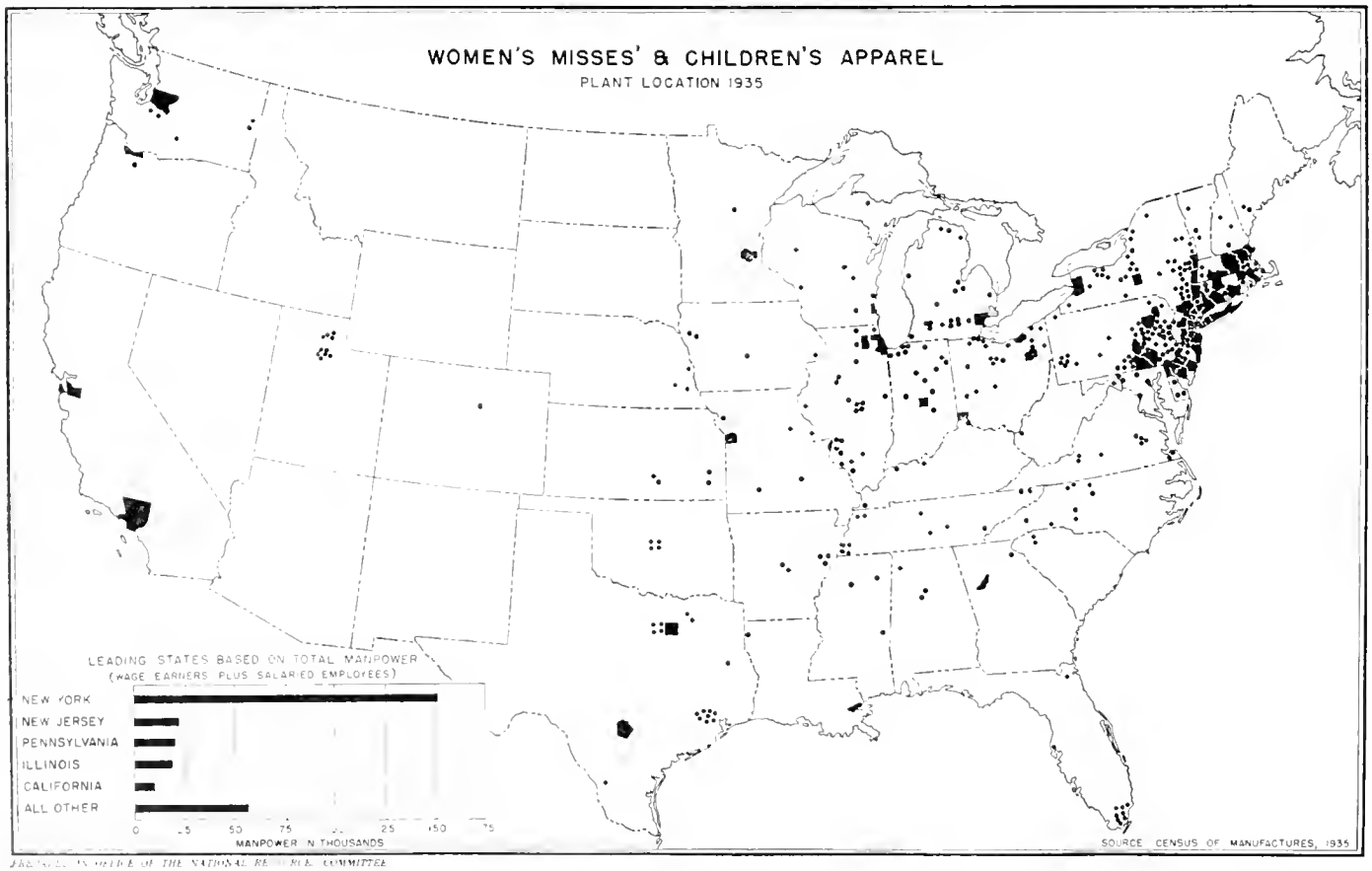
MAP 19

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MAP 20

similar character are pulled out of the industrial area at least in part by the other activity with which they are associated. Two examples appear in maps 31 and 32. The textile machinery industry lies almost wholly outside of the area where most machinery is made, and is closely tied up with the location of textile factories in New England, New Jersey, and the South. Ship and boat building must perforce be carried on in proximity to oceans and waterways.

The iron and steel industry thus has a geographical structure which includes the exploitation or preliminary fabrication of bulky and heavy resources; successive stages in fabrication carried on largely within the industrial area but moving toward the consumers in later stages of fabrication; and branches of the industry involving special fabrication located close to the consumers. In addition there are the major machine producing industries which use steel and largely constitute the industrial area, automobiles, electrical appliances, engines, etc., together with the industrial service industries, notably machine tools. Finally, there are a series of industries fabricating steel in various stages which are mainly or partially located in the industrial area but which have been partly pulled out of that area by the fact that they serve agriculture, serve a particular industry such as textiles, have advantages to gain by proximity to the consumer, or are dominated by some other special factor.

### Forest Products

The several branches of industry utilizing forest products present perhaps the clearest case of the flow from resource to consumer. One branch, the production and utilization of pulp, paper, and newsprint, is presented for illustration in maps 33–36.

The first process, that of converting wood into pulp, tends to occur close to the resource for this is a process which converts a bulky product into one easily transported. Map 33 shows the location of pulp mills in juxtaposition to those types of timber products which are suitable for this use. The manufacture of paper shown in map 34 to a slight extent follows the pattern of pulp mills but mainly moves into the industrial centers and toward the centers of population where paper products are used. Map 35 and especially map 36, showing the use of paper for printing and publishing, repeat the map of consumer distribution. As would be expected the printing and publishing of books shows a greater concentration in the cities than does the printing and publishing of newspapers and periodicals. The latter is hardly distinguishable from the map of consumer distribution. Other wood-using industries and supplementary paper-using industries are shown in appendix 16, maps A–41 to A–48.

These sample series for selected agricultural, textile, iron and steel, and forest products industries give a representative picture of the characteristics of industrial location. The more extensive series in appendix 16 give a much more complete picture but not one which differs significantly from that which emerges from the industries selected for illustration.

### Major Industrial Areas

The concentration of industrial activity shown in map 6 has been emphasized by the pattern of industrial location which stands out in the map series for individual industries and in the maps contained in appendix 16. The areas of concentration comprise the 33 industrial cities with the metropolitan areas surrounding them, designated by the Census of 1930 as "industrial areas," and 100 additional industrial counties.[5] A closer examination of these areas reveals their central importance in the geographical structure of the economy.

The proportion of the total population living in these areas has grown steadily, as industry has played an increasingly important role. In 1870, 23 percent of the population of the United States was living within the 33 census areas. In 1930, the proportion was 35 percent. Figures are not available with which to show the roughly corresponding increase in the proportion of all gainfully employed located in these areas. The location of manufacturing wage earners, however, shows clearly that the proportionate growth in population in these areas was a reflection of the shift from agriculture to industry. Almost as large a proportion of the manufacturing wage earners were located in these areas in 1870 as at present, 53.3 percent in 1870 as compared with 55.5 percent in 1935.[6]

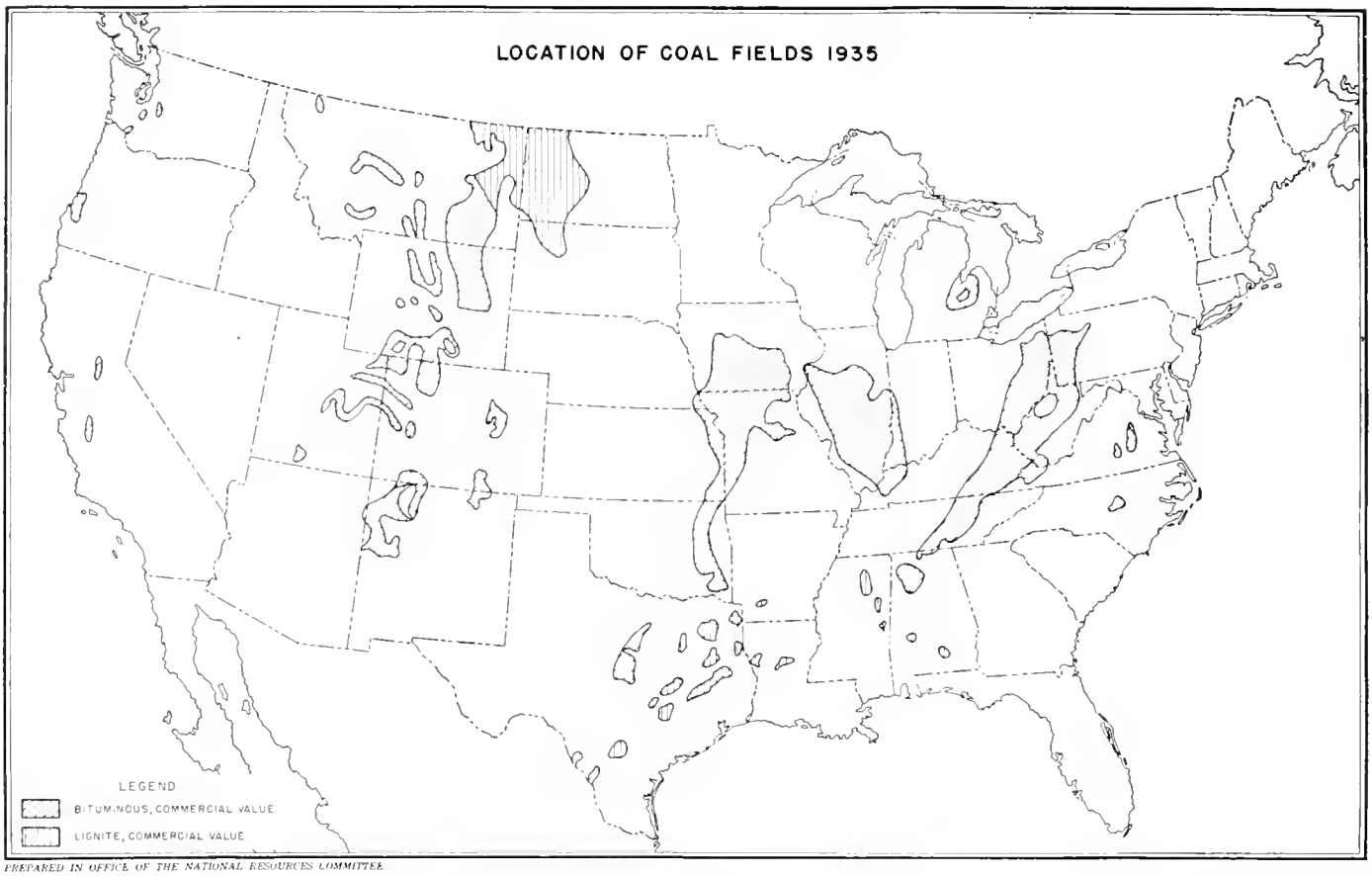
The pattern of manufacturing activity had already largely assumed its present form by the latter half of the nineteenth century. The above evidence of the proportionate stability of wage jobs in the 33 census areas is confirmed by data for the 200 industrial counties. In 1899, the earliest year for which data on these 200 counties are available, 73.2 percent of all manufacturing wage jobs were located in these counties. In 1935, the proportion was 74.4[7] percent. Chart I shows for 13 of the largest industrial areas, for the 33 industrial areas, and for the 200 industrial counties the proportion of all manufacturing wage earners since 1870.

The development of the major industrial area of the northeast, and the secondary areas of the southern Piedmont and the west coast, has been largely the product of history, conditioned by the location of resources.

[5] The 33 areas include 100 of the 200 counties shown on map 6, plus 11 small counties included in metropolitan areas which are not included in the 200 industrial counties.

[6] *Growth of American Manufacturing Areas*, Glenn E. McLaughlin, Philadelphia, 1938.

[7] *Is Industry Decentralizing*, Daniel B. Creamer, Philadelphia, 1935.

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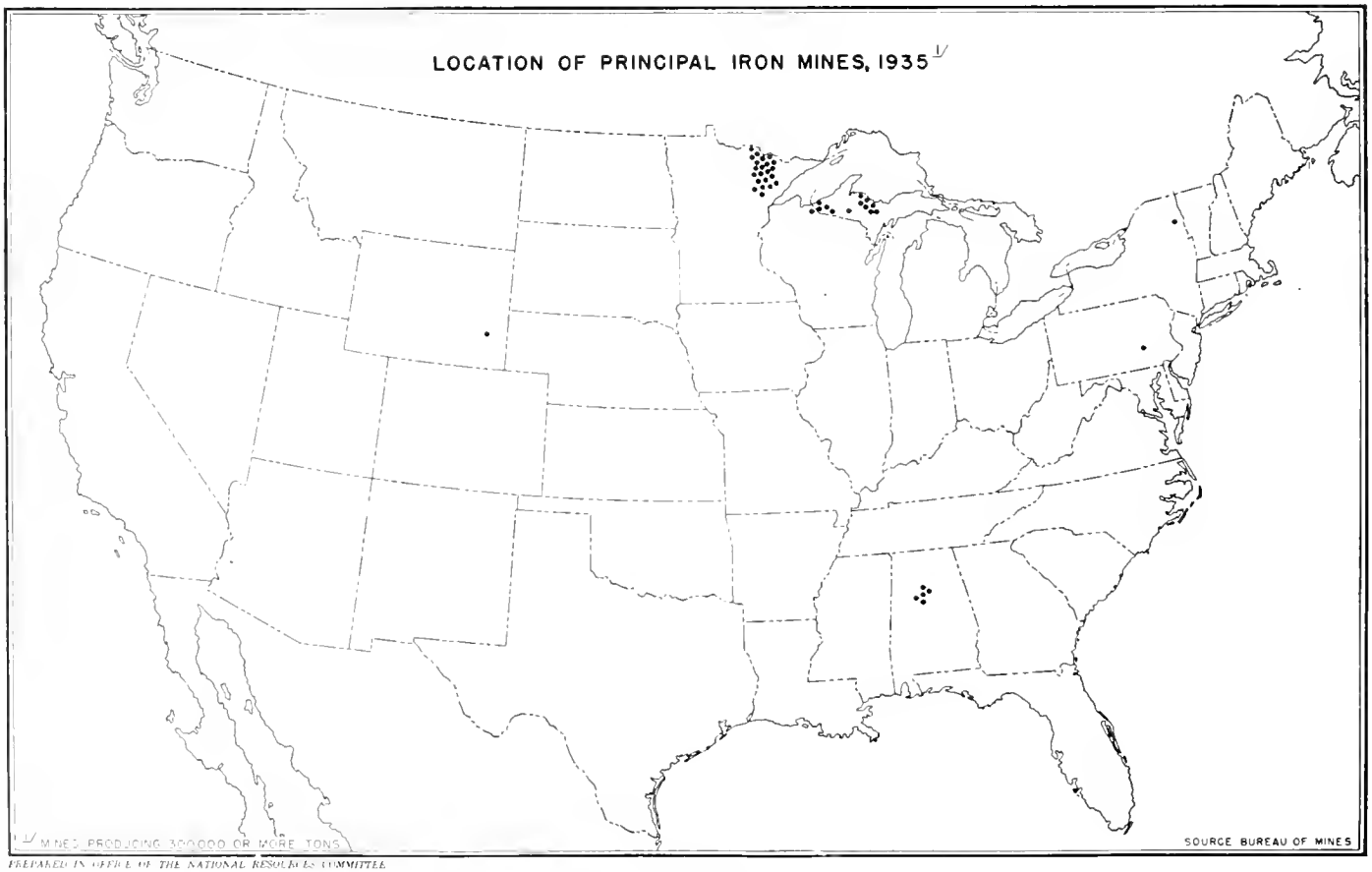
MAP 21

Source: Bureau of Mines.

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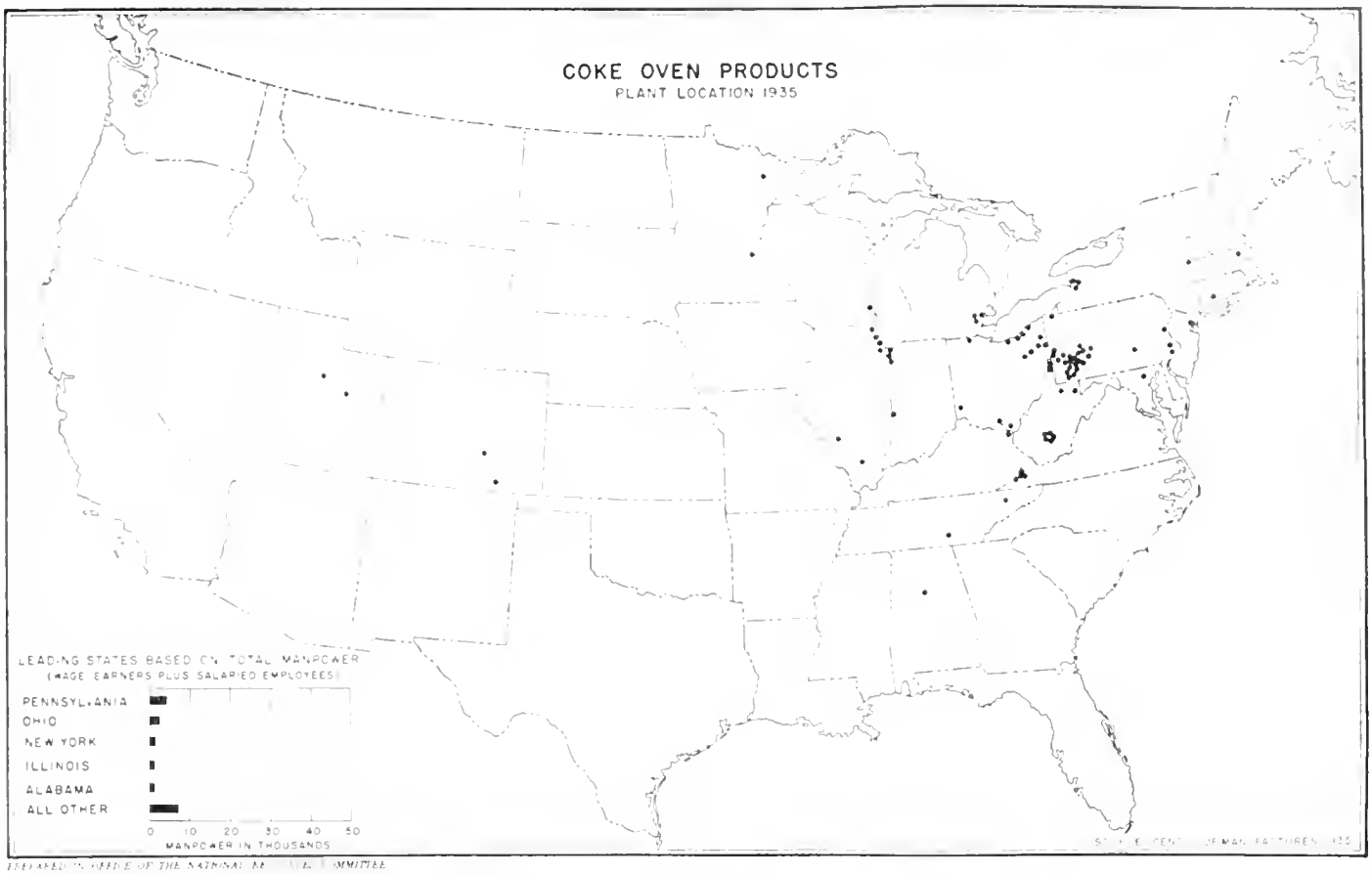
MAP 22

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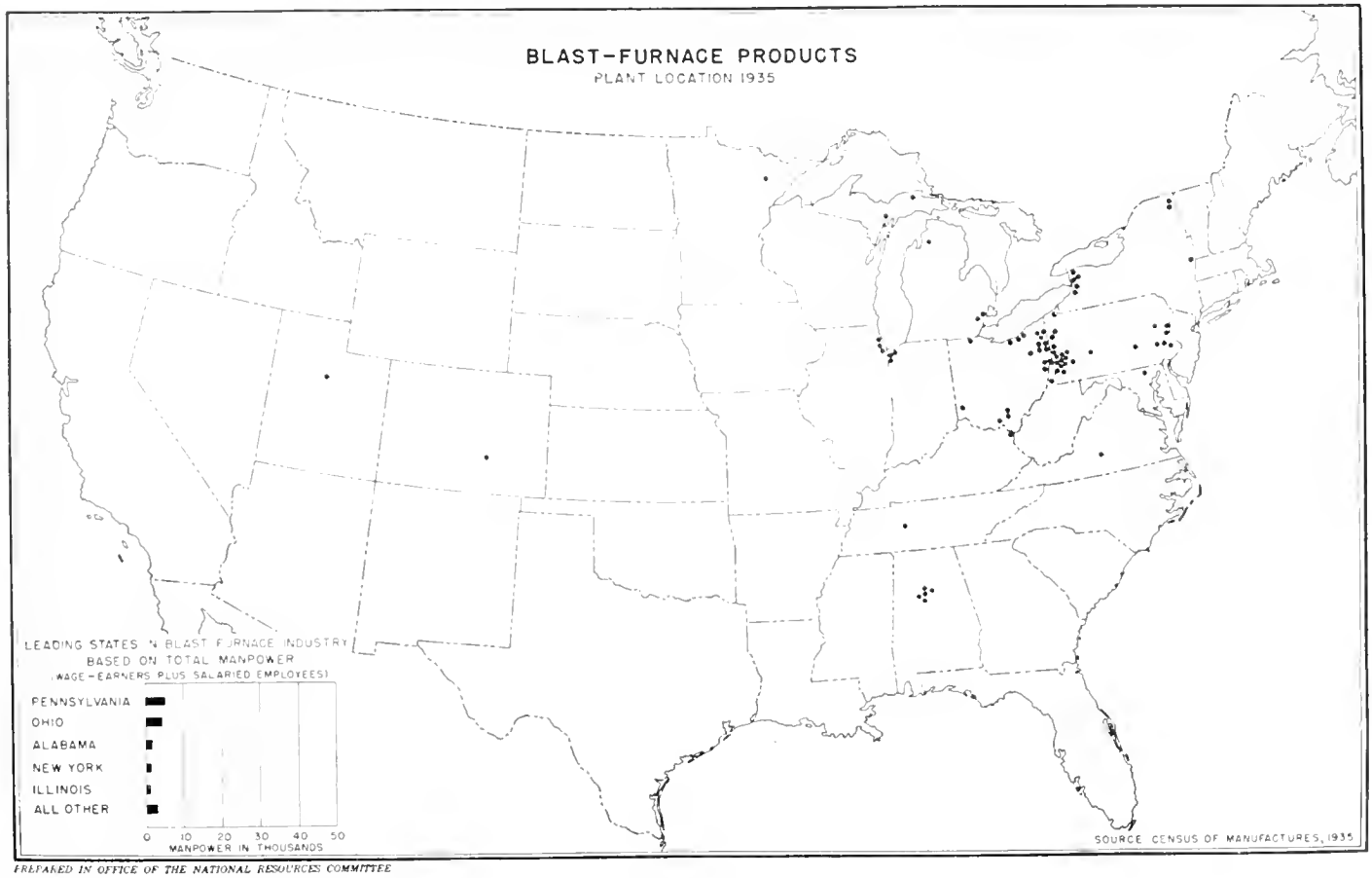
MAP 23

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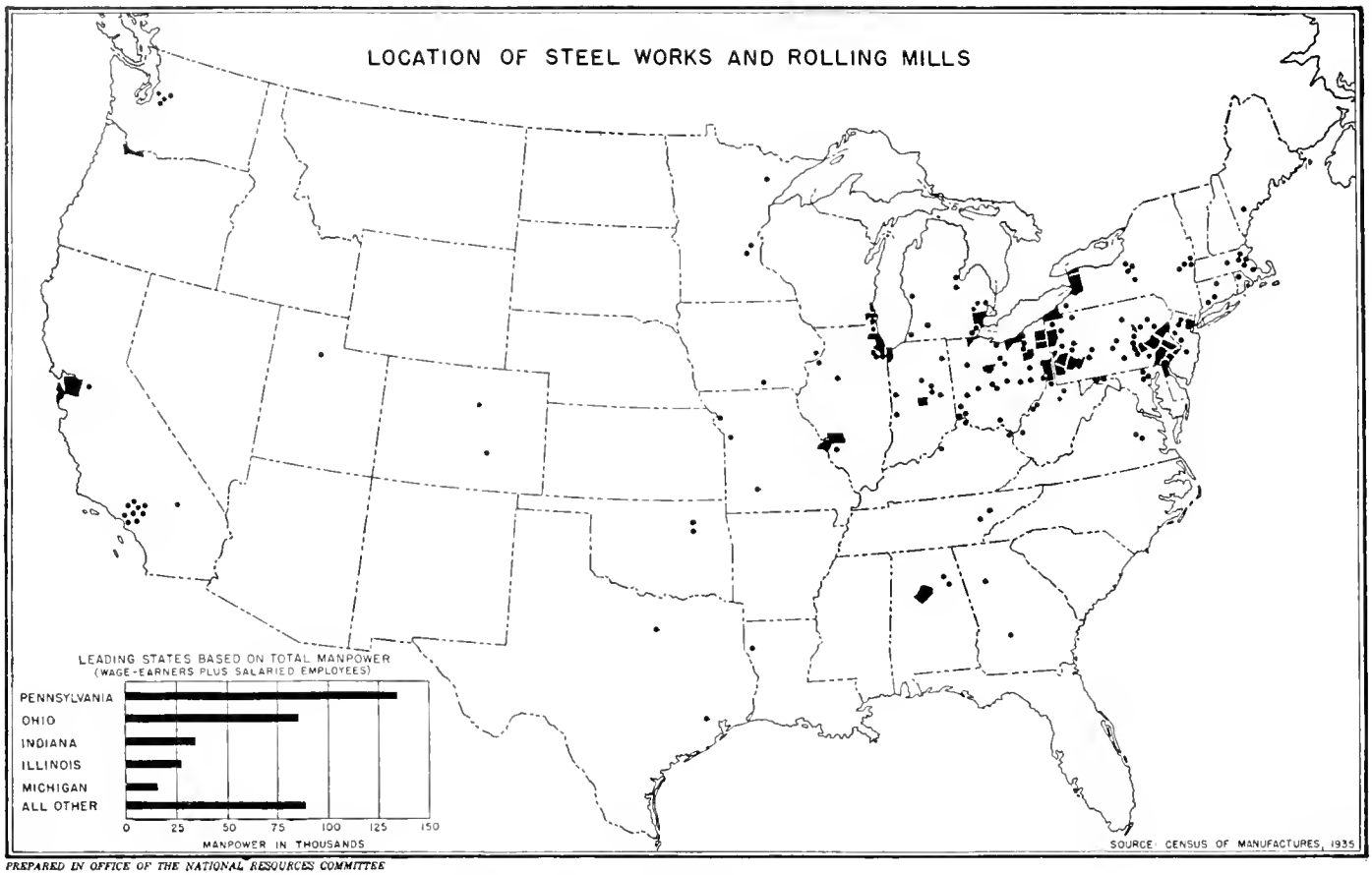
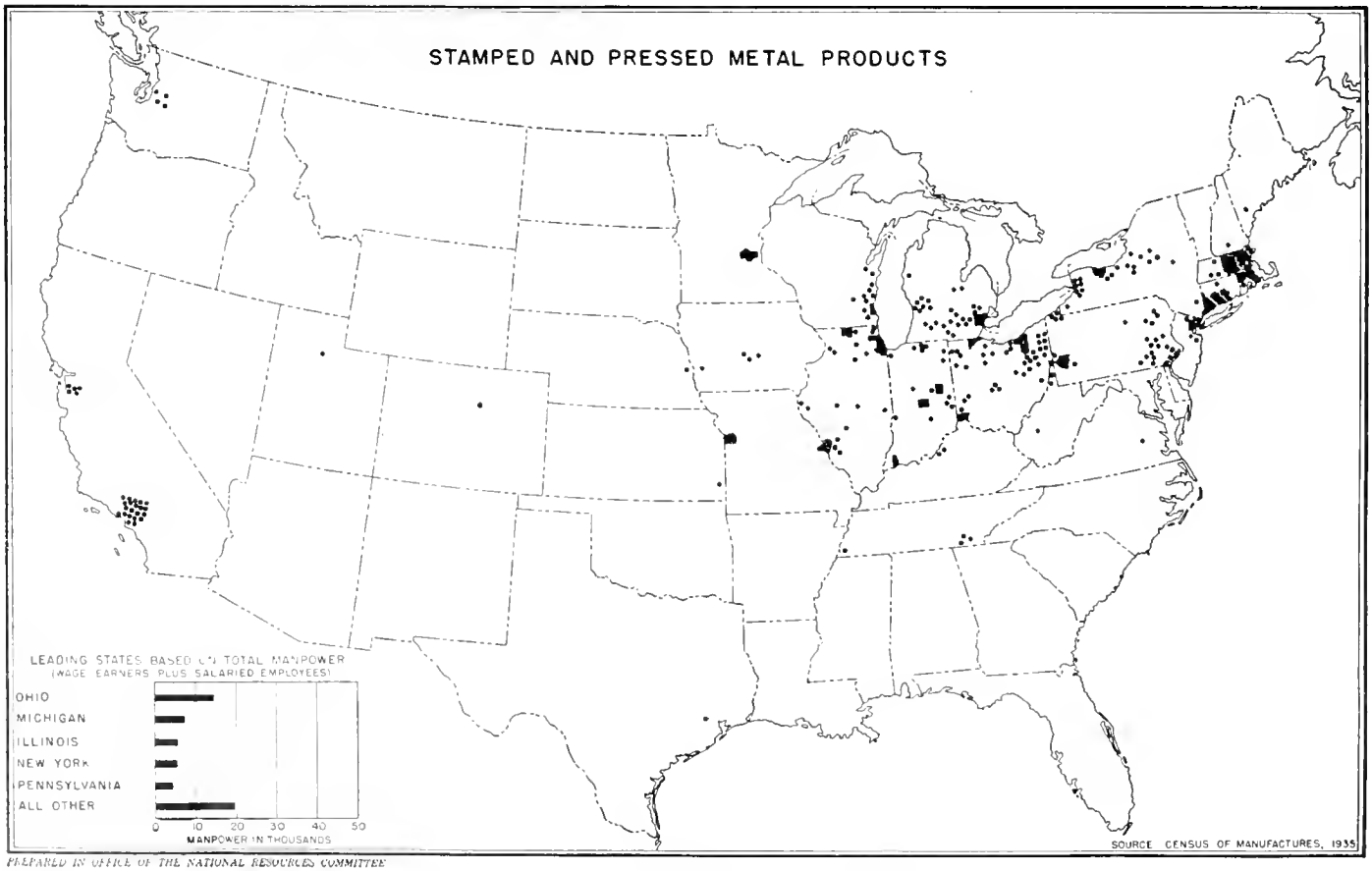
MAP 24




*PREPARED IN OFFICE OF THE NATIONAL RESOURCES COMMITTEE*

MAP 25

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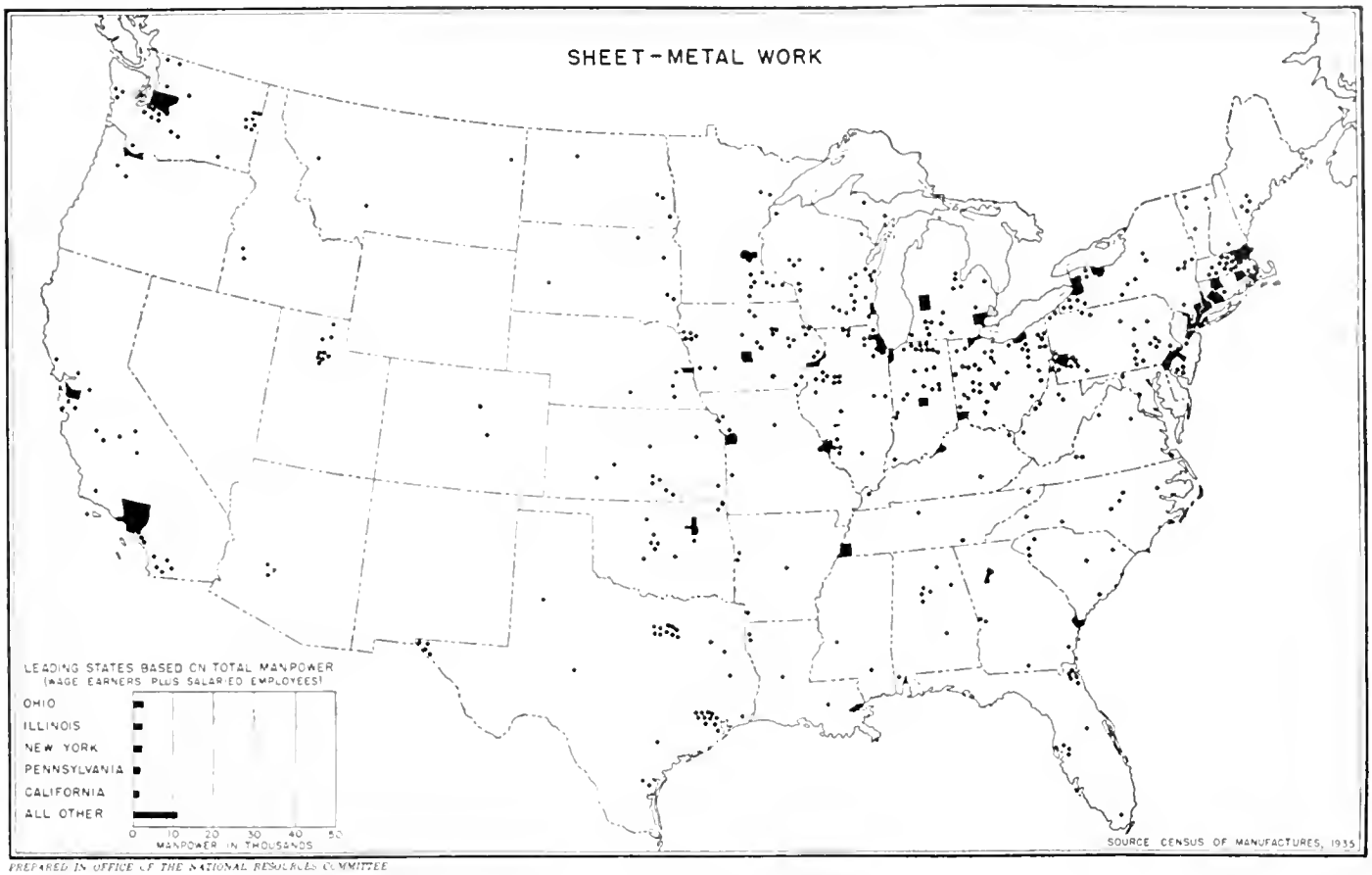
MAP 26

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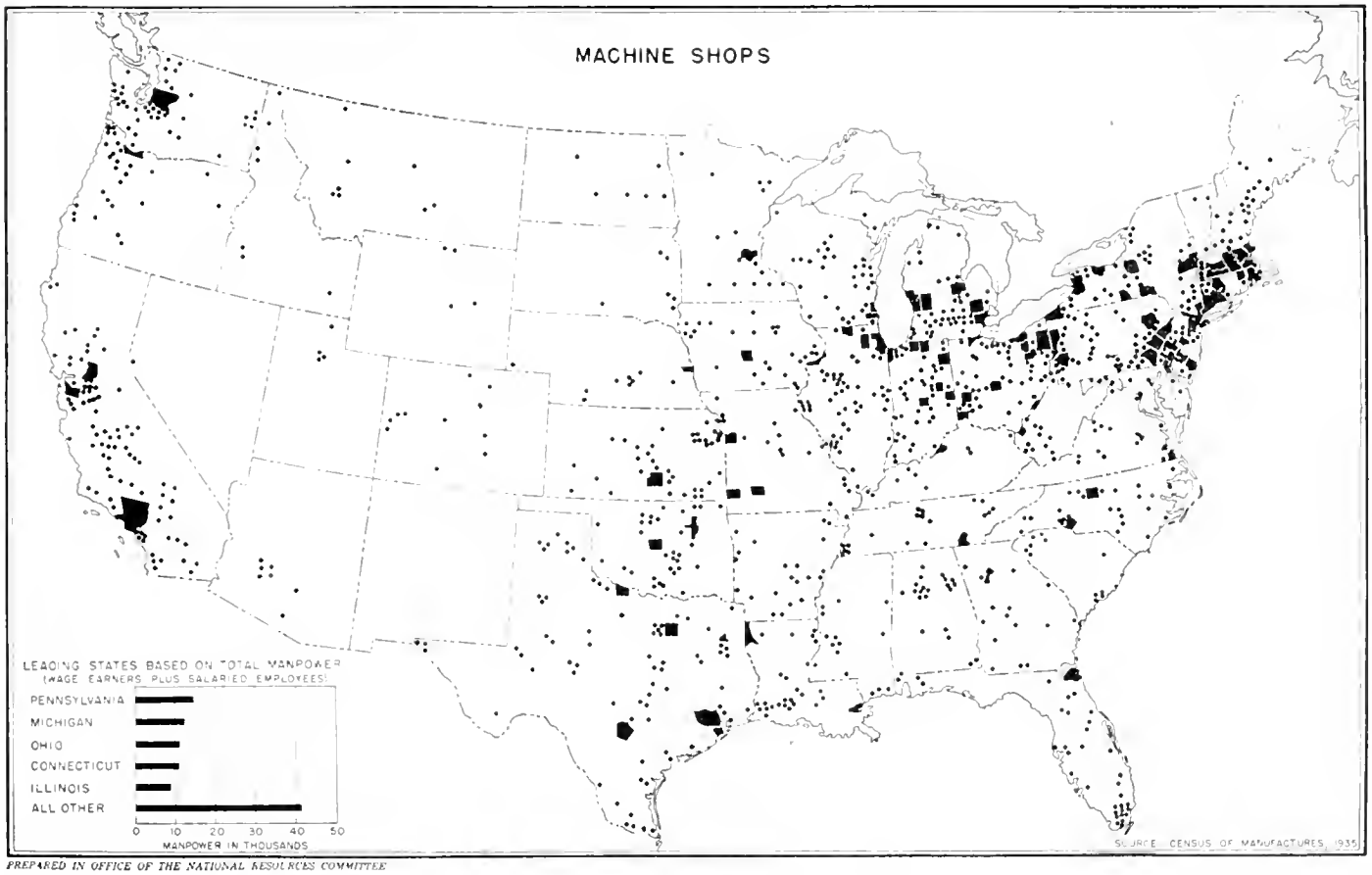
MAP 27

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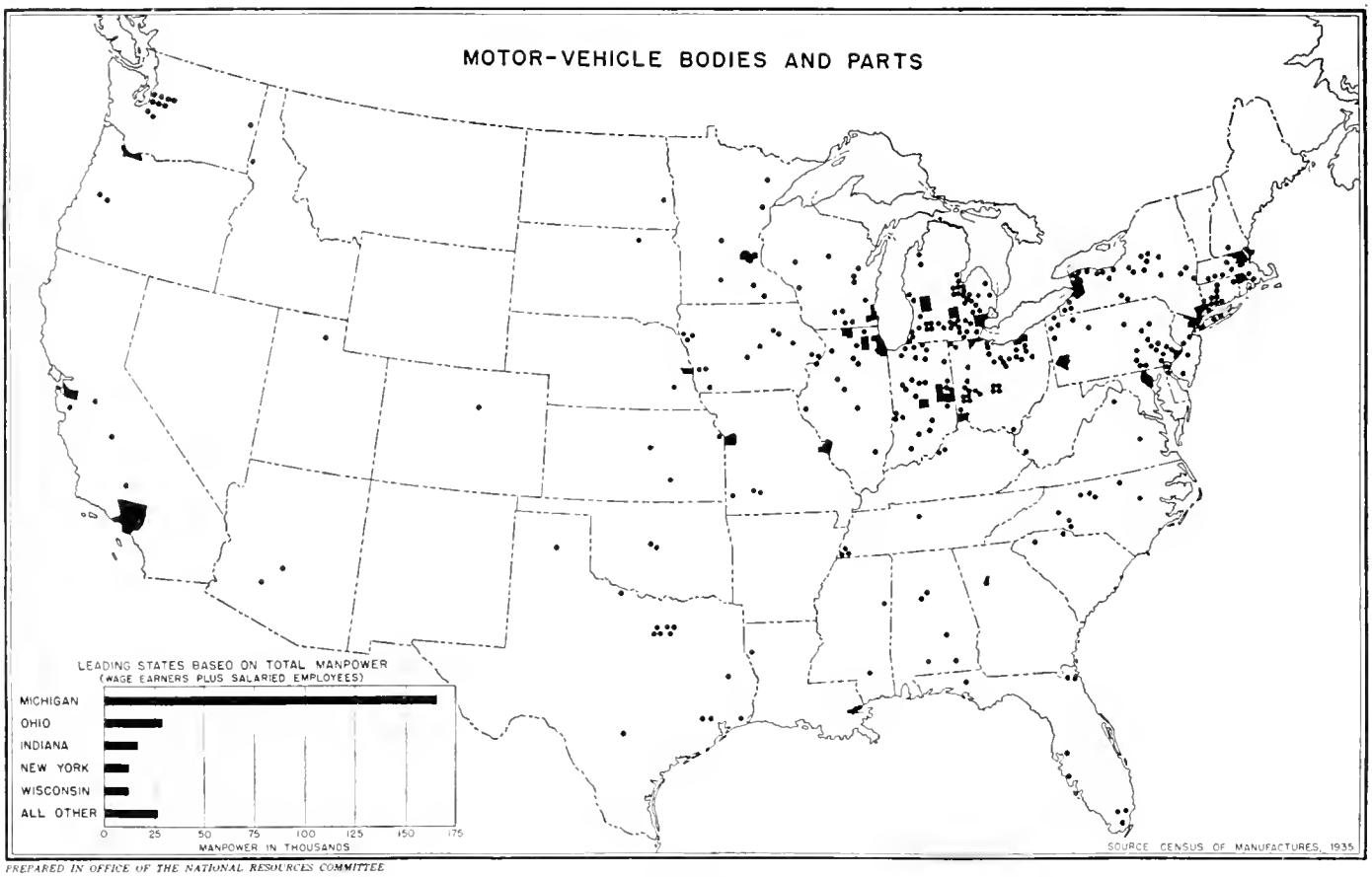
MAP 28

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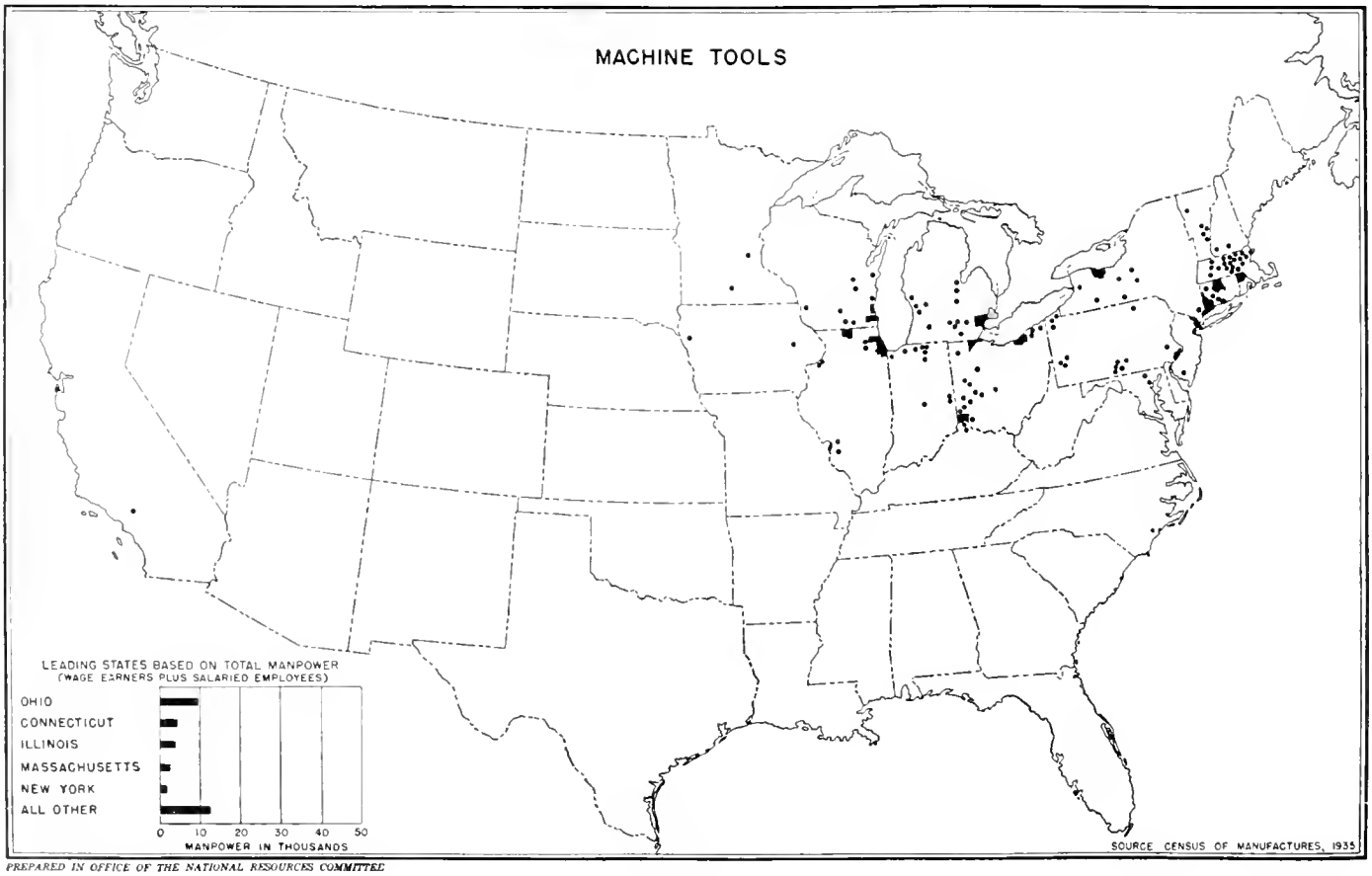
MAP 29

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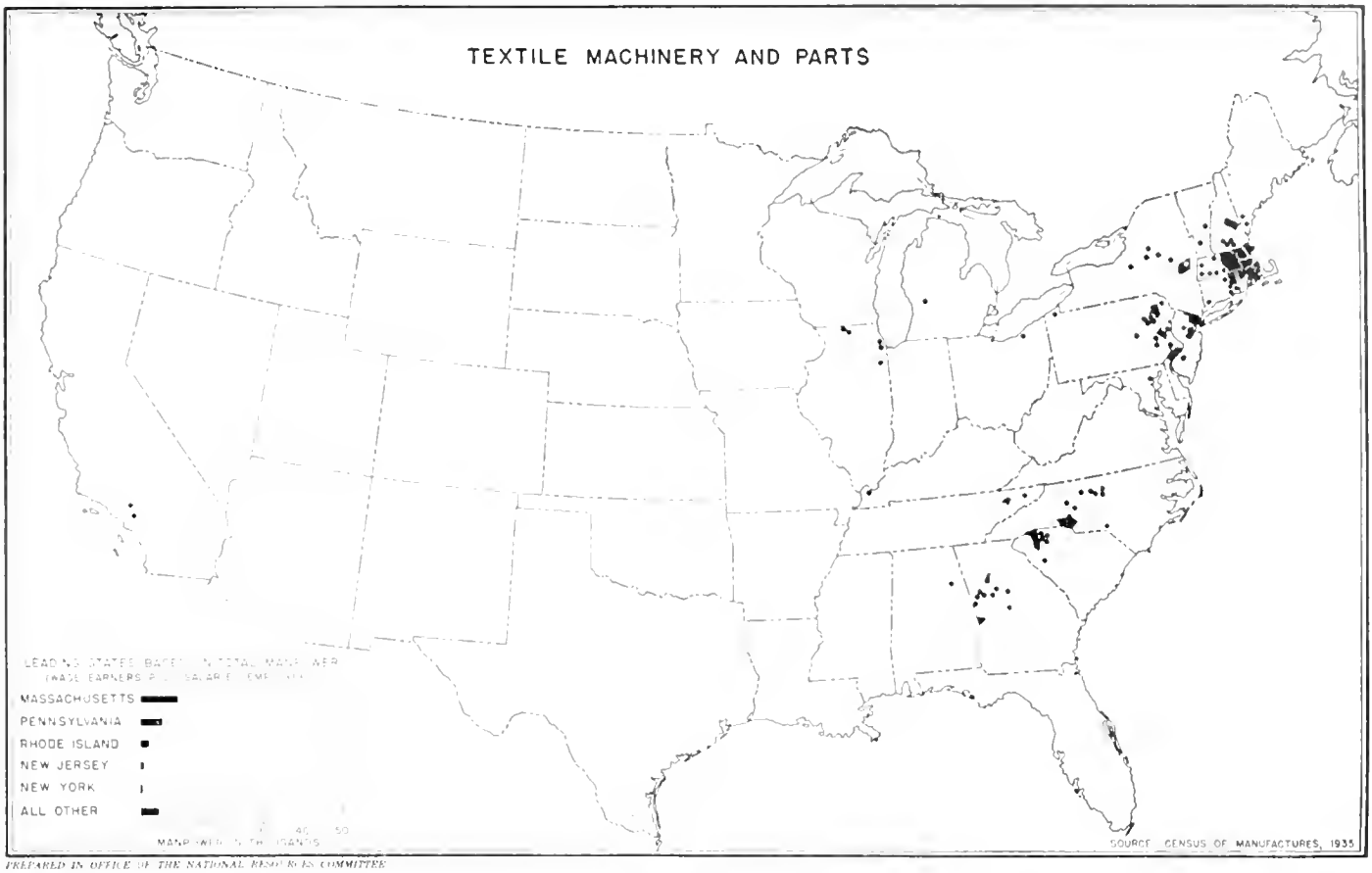
MAP 30

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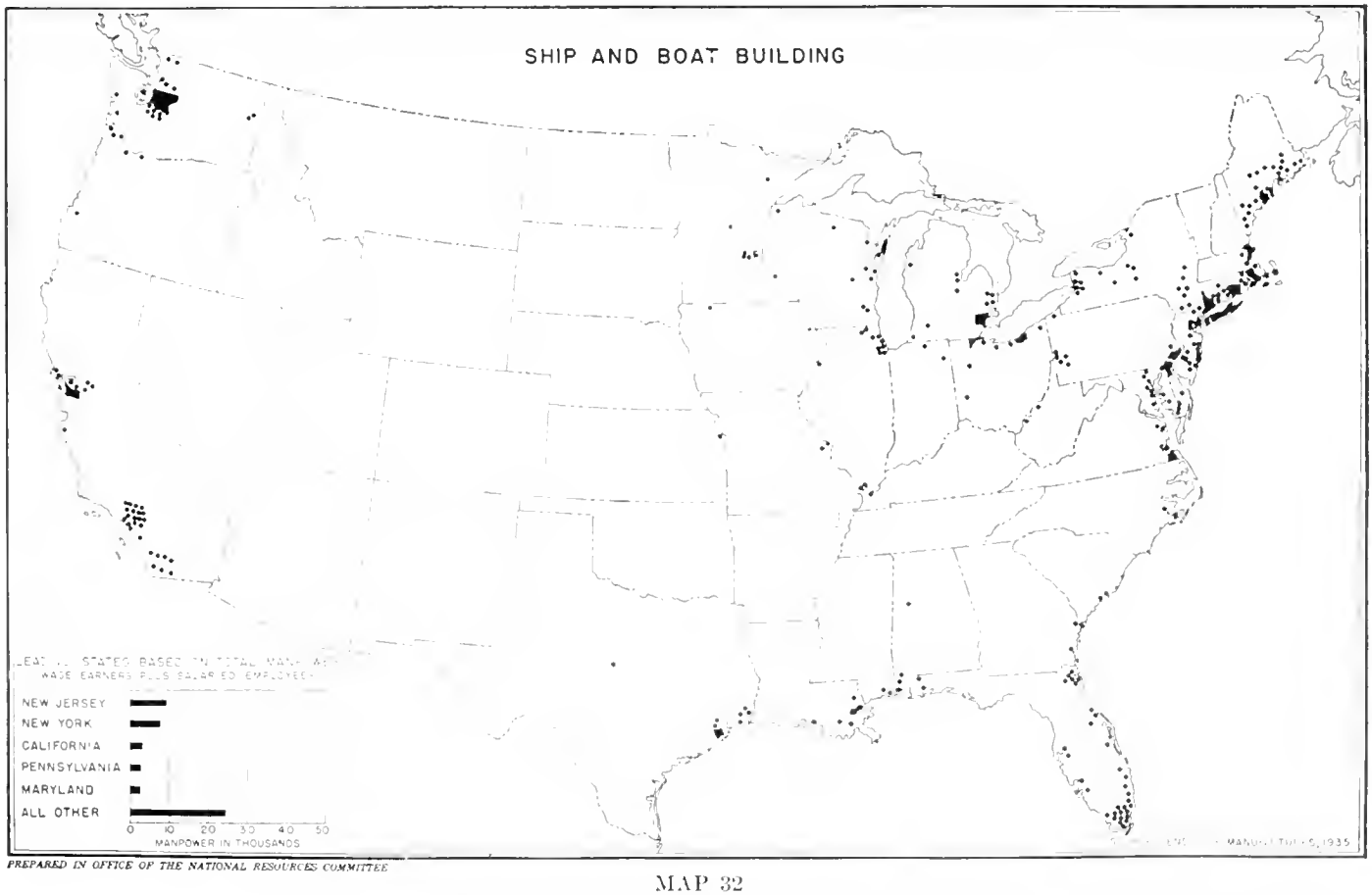
MAP 31

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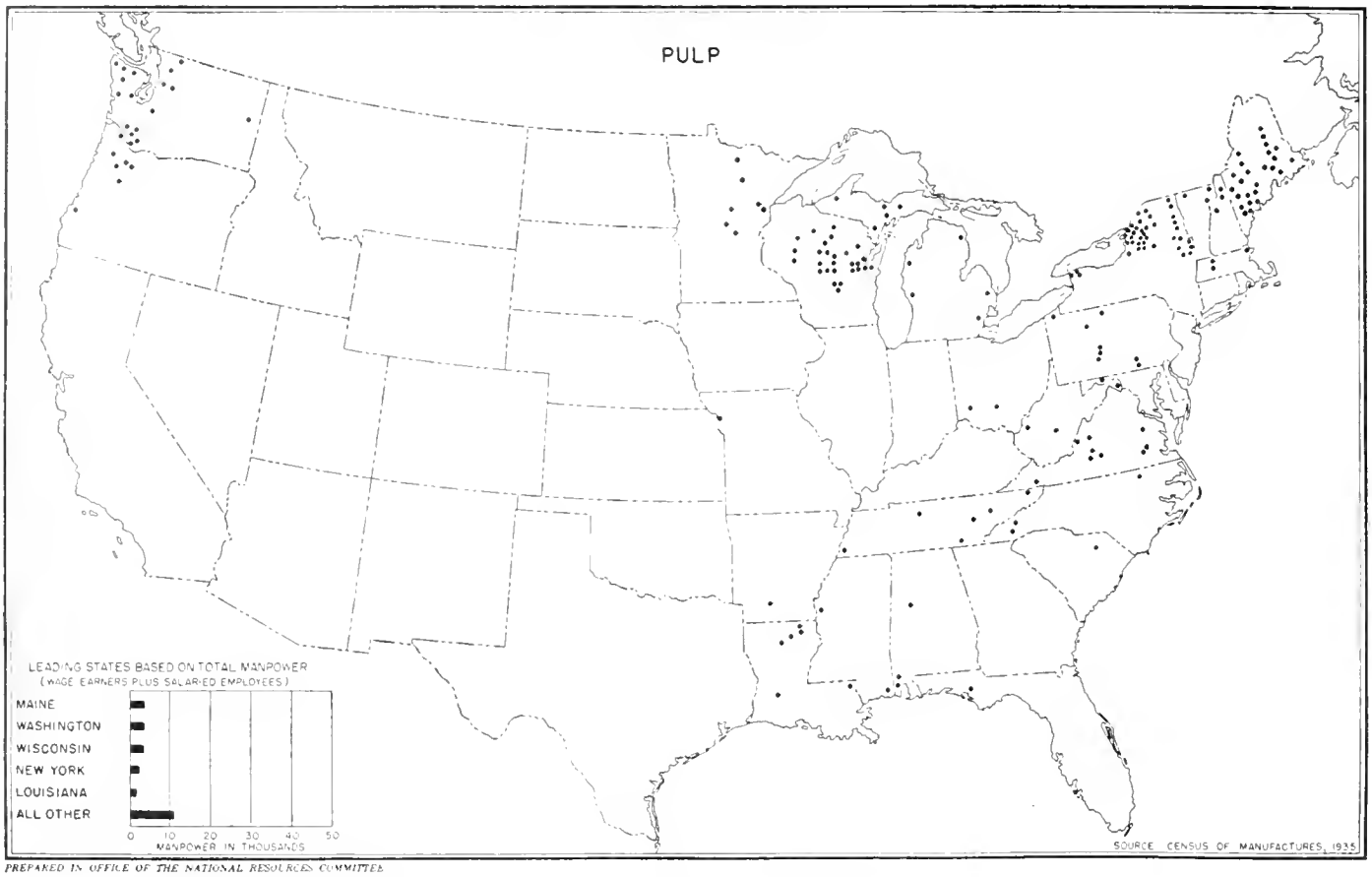
MAP 32

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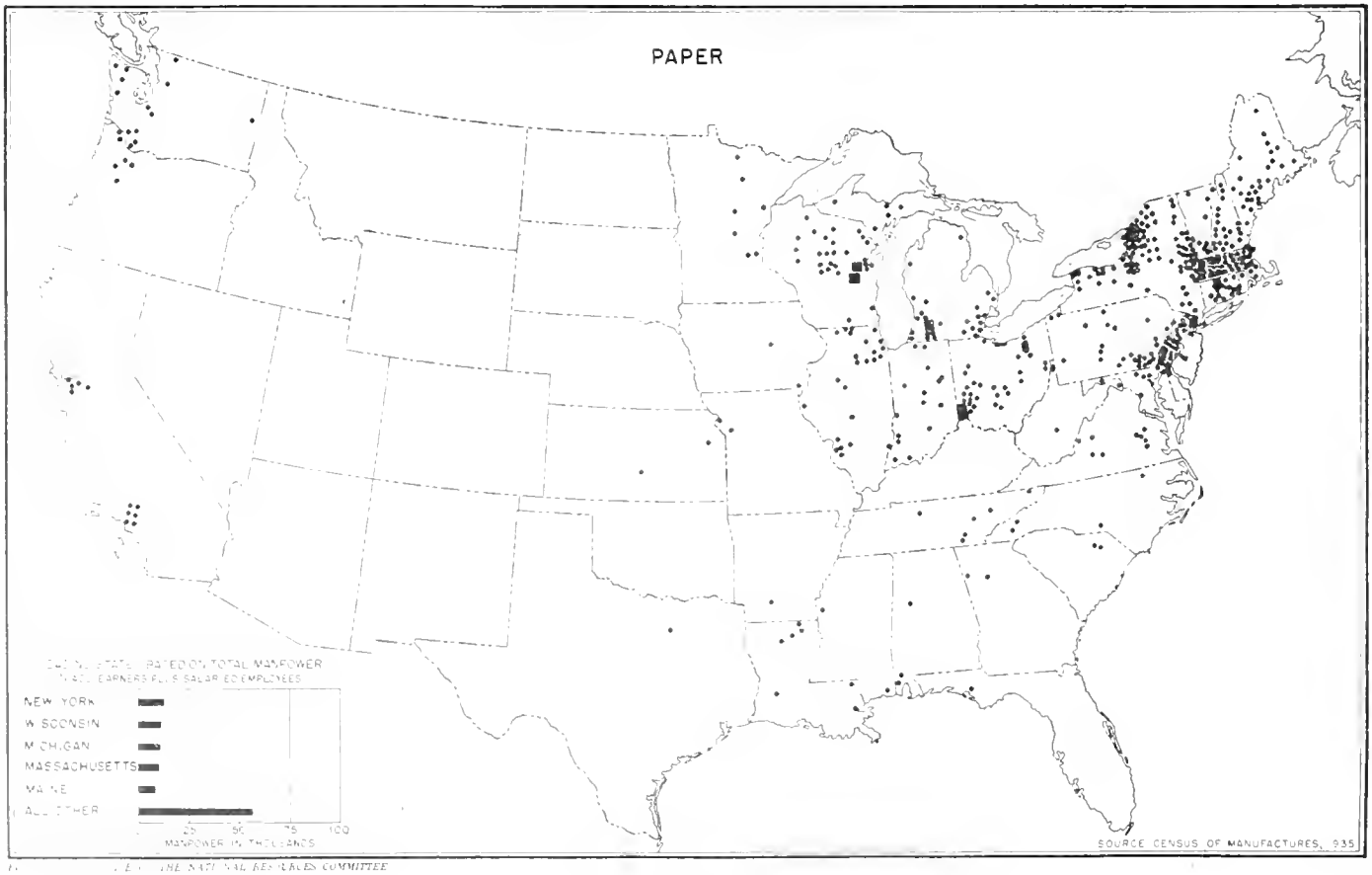
MAP 33

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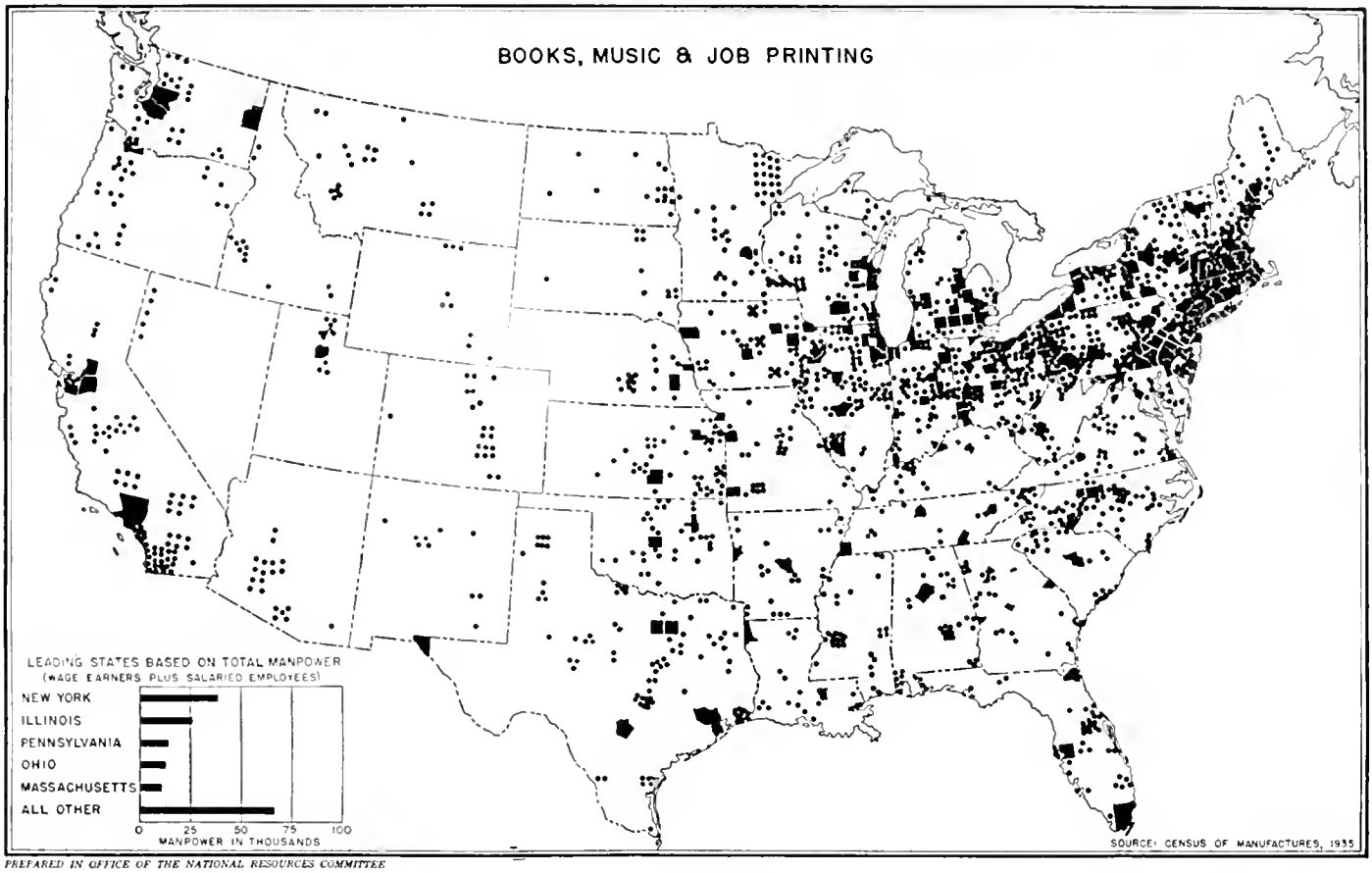
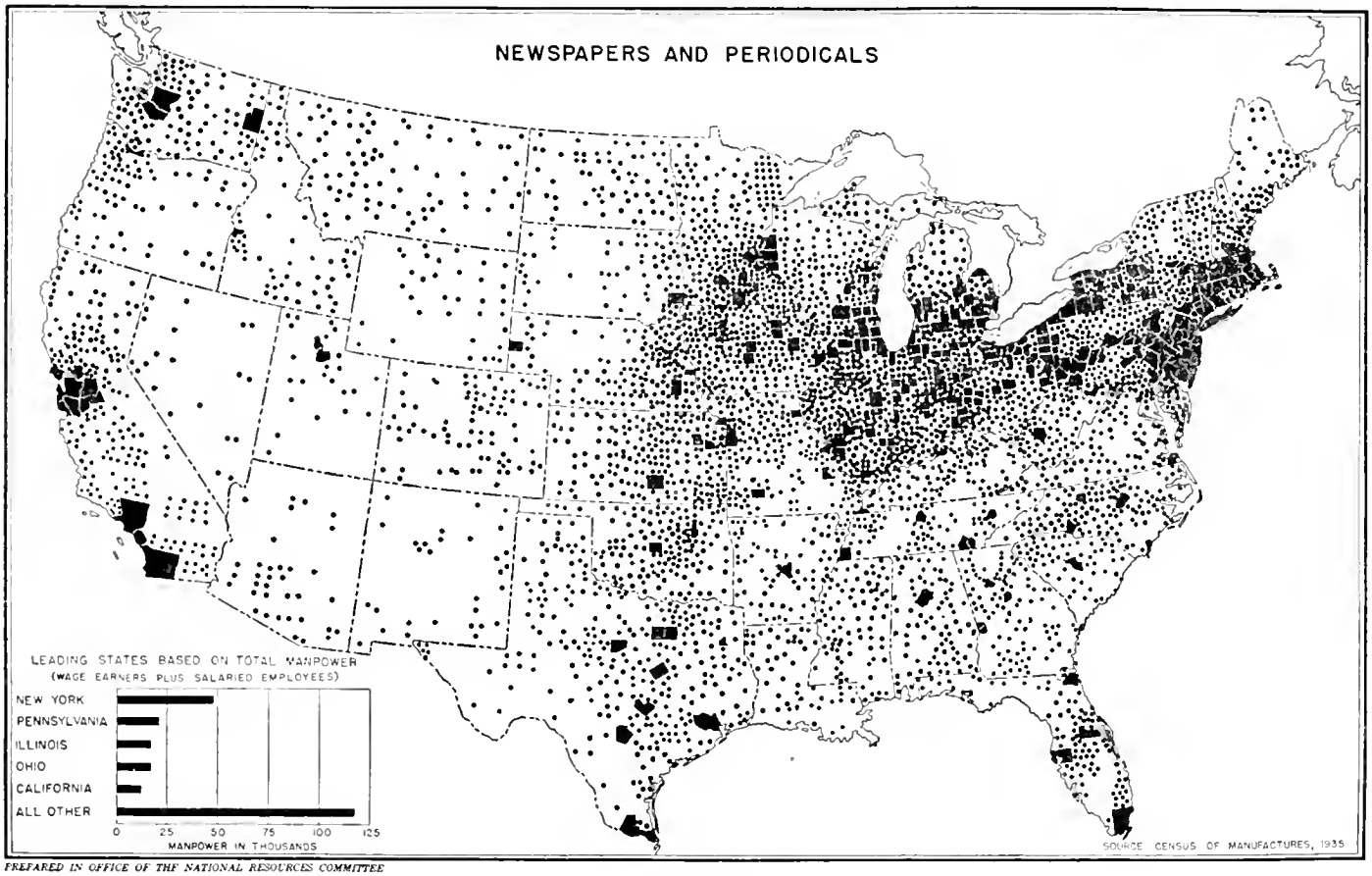
MAP 34




*PREPARED IN OFFICE OF THE NATIONAL RESOURCES COMMITTEE*

MAP 35




*PREPARED IN OFFICE OF THE NATIONAL RESOURCES COMMITTEE*

MAP 36

The location of water power in New England, of population in commercial centers on the coast, of coal and iron resources in the Pittsburgh and Great Lakes area, and, more recently, of available manpower and electricity in the southern region, have contributed to the development of these manufacturing areas. Commercial cities located at strategic points along routes of transportation have constituted nuclei for the development of industries serving the consumer and, to a certain extent, of more footloose industries directly tied neither to resources nor to markets.

Development of these industrial areas has been a cumulative process. Within these areas are to be found industries, such as the furniture industry in Michigan, whose original location was largely determined by the resource used for raw material but which has remained in its old location though Michigan forests no longer constitute its main supply of wood. Skilled workers, a marketing system in the locality, heavy investment in plant and equipment, the presence of subsidiary industries, all contribute to hold such an industry in its historical abode though its source of raw materials may shift. The automobile industry owes its extreme localization in the Detroit area largely to the fact that it is the successor to an industry, carriage making, whose location, like that of furniture, rested on proximity to the Michigan forest resources. Other industries, such as the rubber industry in Akron, Ohio, or the glove industry in Gloversville, N. Y., are more clearly the result of the sheer accident that the inventor or promoter happened to be located at the place in question.

The distinctive characteristics of individual industrial areas and their relative rates of growth depend in part on the kinds of industries which are located there.[8] When particular areas are considered, their growth, even within the same general region, shows conspicuous differences, e. g., the contrast between the Cincinnati and Akron areas, between Detroit and Buffalo, or between Worcester and Hartford. Areas which have grown rapidly have tended to be those dominated by new industries, while wide diversification has tended to accompany lower rates of growth.

Consumers' goods, especially nonessential goods, have shown more rapid and conspicuous rates of growth than producers' goods and the areas which are primarily consumers' goods areas have grown correspondingly. Areas dominated by producers' goods have shown a slower and more even development. The rate of growth of nondurable consumer goods appears to be related primarily to the growth of population, and to some extent to the transfer of industries from the home. The rate of growth of consumers' durable goods has been more rapid and less dependent on such a slow and stable factor as population growth. Shifts in consumer demand, particularly for nonessential and durable goods, have contributed markedly to the growth of particular areas, e. g., the Rochester area in which the popularity of photography has contributed to the growth of that industrial area.

Other factors appear to condition both the rate of growth and the possible ultimate size. Whereas the natural advantages of an area may provide an ultimate limit to the size of the area, changes in methods of exploiting natural resources and stages in the exploitation of particular resources make a difference in rate of growth. The market area served by an industrial area may be of major importance in setting a limit to the possible development of industries which must be near consumers, but for industries serving a national market the whole nation constitutes the market area. Differences in cost among areas are unstable as the increasing use of power tends to make differences in cost of power more important relative to differences in other costs, and as changes in methods of production shift the relative importance of other items such as wages and materials. Transportation costs have always been of major importance. It is notable that areas of most rapid industrial growth have been on the periphery of the country, the Atlantic and Pacific coasts, the Great Lakes region and the Gulf.

Distinctive development of different industrial areas, moreover, may reflect the intangible factors of leadership, inventive effort, promotional activity, and management. Areas which are administered from the outside, such as the Johnstown steel district, are poorly adapted to develop the kind of leadership likely to contribute to growth. The extent to which the financial supremacy of New York influences the various industrial areas in the country may contribute importantly to differential developments in those areas. Similarly the presence of a tradition of invention, e. g., in New England and certain of the northeastern areas, provides a more rather than a less favorable field for the development of new industries. Some areas, most conspicuously Los Angeles, owe their development substantially to their promotional activity. There may, moreover, be very considerable differences in management. In the newer areas, young men with drive and imagination tend to be the most conspicuous type. In the older areas, men who have been trained as junior executives in large corporations hold corresponding positions. The type of development to be expected from the one and the other of these types of managers may differ markedly.

It is clear that the major shifts in industrial location have not been away from the areas which developed industrially more than 50 years ago. They have,

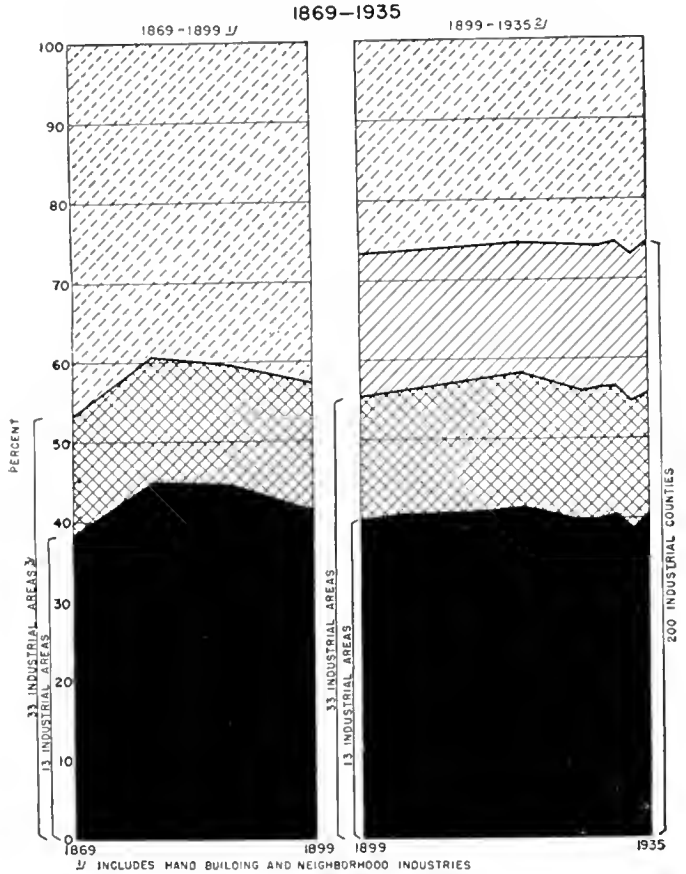
[8] The following analysis is summarized from *Growth of American Manufacturing Areas* by Glenn E. McLaughlin, Philadelphia, 1938.

rather, been in two directions: first, for each of these areas a shift has taken place from the central city to the surrounding region; secondly, there have been shifts in the relative position of one or another of these industrial areas as the rate of growth of older areas or areas characterized by relatively stable or declining industries has become slower while newer areas and newer industries have leaped ahead.

The tendency for industry to leave the central cities and seek the industrial suburbs and adjoining counties is apparent in each of the major areas and in the industrial counties taken together. In each of the 13 large metropolitan areas included in chart I, the proportion of the manufacturing wage earners located in the central city of the area dropped steadily, or almost steadily, from 1870 to 1935. This was true of cities such as Cleveland which in 1870 contained 91.6 percent of the manufacturing wage earners in the Cleveland area but only 81.5 by 1930, and of cities such as Boston which contained only 29.7 percent of the wage earners in its area in 1870 and only 22.7 percent in 1930. For the 13 areas taken together, the proportion of wage earners located in the central cities dropped from 69 percent in 1870 to 59 percent in 1935. Within the 200 industrial counties, similarly, 54 percent of manufacturing wage jobs were located in the principal cities in 1899 and 44.6 percent in 1935.

CHART I

PROPORTION OF MANUFACTURING WAGE EARNERS IN INDUSTRIAL AREAS AND INDUSTRIAL COUNTIES 1869—1935




1/ INCLUDES HAND BUILDING AND NEIGHBORHOOD INDUSTRIES
2/ EXCLUDES HAND BUILDING AND NEIGHBORHOOD INDUSTRIES
3/ 33 AREAS CONTAIN 100 OF 200 COUNTIES AND 11 COUNTIES NOT INCLUDED IN 200

Source: *Is Industry Decentralizing?* Daniel B. Creamer, Philadelphia, 1935; and *Growth of American Manufacturing Areas*, Glenn E. McLaughlin, Philadelphia, 1938, p. 160.

Examination of the trends within the 200 industrial counties from 1899 to 1935 (using the industrial counties as bounded in 1930 as a basis) reveals that counties in certain parts of the area have been losing their proportion of wage earners steadily while others have been increasing their proportion. As one would expect, the counties lying within Massachusetts and Rhode Island and in New York, Pennsylvania, and Delaware declined in relative importance. On the other hand the counties which have consistently shown an increase in the proportion of industrial-county wage earners within their borders fall in three distinct areas, the State of Michigan, the Southern States of West Virginia, North Carolina, Tennessee, and Texas and the State of California. The trend within the area is even more clearly to be seen from the times at which counties within each State contained the largest proportion of industrial-county wage earners that they did at any time. States whose industrial counties were at their highest relative position in 1899 include not only the New England and Middle Atlantic States but those containing industrial counties located along the line of the Ohio-Mississippi River traffic, Louisville, St. Louis, New Orleans, Minneapolis, and St. Paul, and also the mining area around Denver, Colorado.

In contrast to these are the counties in the Middle Western States whose proportionate peak was reached in 1929, namely counties in Ohio, Indiana, Illinois, and Wisconsin. The relative position of the counties in all the Southern States was strongest at the bottom of the depression in 1933. In 1935 Michigan and California occupied the highest relative position which they had at any time.

TABLE II.— *Percentage distribution of manufacturing wage jobs within 200 industrial counties, 1899, 1929, 1935*

| Industrial counties in | 1899 *percent* | 1929 *percent* | 1935 *percent* |
|---|---|---|---|
| New England | 20.68 | 14.77 | 14.54 |
| Middle Atlantic | 43.90 | 37.06 | 36.40 |
| East North Central | 22.03 | 31.17 | 31.10 |
| Northeast | 86.61 | 83.00 | 82.04 |
| South Atlantic | 3.40 | 4.86 | 6.17 |
| East South Central | 2.57 | 2.83 | 2.91 |
| West South Central | .29 | .90 | .94 |
| South | 6.26 | 8.59 | 10.02 |
| West North Central | 4.50 | 3.80 | 3.43 |
| Mountain | .28 | .25 | .21 |
| Pacific | 2.35 | 4.36 | 4.30 |
| West | 7.13 | 8.41 | 7.94 |
| Total 200 industrial counties | 100.0 | 100.0 | 100.0 |

Source: *Is Industry Decentralizing?* Daniel B. Creamer, Philadelphia, 1935; and *Growth of American Manufacturing Areas*, Glenn E. McLaughlin, Philadelphia, 1938, p. 100.

Although the older areas have declined in relative importance they remain the main centers of manufacturing. Table II shows the regional distribution of wage earners within industrial counties in 1899, 1929, and in 1935. New England, the Middle Atlantic, and the East North Central regions combined, i. e., the northeast industrial area, accounted for 86 percent of industrial area jobs in 1899 and still accounted for 82 percent in 1935. Although the proportion of the South increased markedly it still accounted for only 10 percent of industrial area employment in 1935.

The migration of industry has been a contributing factor affecting the relative industrial importance of different regions and localities. For the most part, such "migration" does not involve the physical transfer of machinery and workers, or even, often, of business management from one place to another, but rather the tendency for new plants in an industry to seek the more rather than the less favorable location until the center of the industry's activity has shifted.

The major industries which have shifted their location have been lumber, cotton textiles and industries subsidiary thereto, the shoe industry, hosiery, iron and steel, rubber tires, and, to a lesser extent, furniture and clothing. Although very marked shifts have characterized some of these industries, only lumber and cotton textiles involved a significant decline in the volume of employment in the older centers prior to the drop in all employment after 1929.[9]

The lumber industry's successive jumps from Maine to Michigan to Wisconsin, to the South and to the Pacific Northwest have reflected the search for virgin timber stimulated by the wasteful technology which has characterized the industry. Cut-over areas and stranded populations have been left behind at each stage.

The cotton textile industry moved south primarily in search of cheap labor and cheap power, just as it had originally located in New England when labor and power supplies were most available there. Though the growth of the cotton industry in the South was well under way before the end of the nineteenth century, 50 percent of cotton textile workers were still to be found in the New England area in 1909. By 1935 the proportion had dropped to 22 percent, while the southern area had risen from 35 percent in 1909 to 63 percent in 1935. Dyeing and finishing followed the movement of textile mills somewhat later. In 1909, less than 2 percent of dyeing and finishing was done in the South, although 35 percent of cotton goods were already being made in that area. By 1935, 22 percent of the dyeing and finishing employees were located in the South, while the proportion in New England had dropped from 49 percent to 31 percent.

[9] Data on migration from *Census of Manufactures.*

The hosiery industry is now following textiles into the Piedmont area. Though the center of the industry is still in Pennsylvania, the proportion in North Carolina and Tennessee has increased from 6.4 percent in 1909 to 23 percent in 1935.

In both of these industries the portion of the industry calling for least skill moved first, followed by the finer processes, as the latter became more mechanized and as skill was developed in the new location. Fine textiles have followed coarse from Massachusetts to the Carolinas; full-fashioned hosiery is following seamless hosiery from Philadelphia to North Carolina and Tennessee. To these industries which have been attracted by a cheap and plentiful labor supply, the possibility of further migration to other industrially undeveloped areas constantly presents itself. The textile manufacturers of the Piedmont are now concerned lest their region suffer the fate of New England and they lose their mills to the deeper South. As yet, however, such migration to Alabama and Mississippi has not amounted to significant proportions.

The furniture industry, too, has shown a tendency to grow in the southern area. The proportion of the industry in North Carolina has increased from 4.5 percent in 1909 to 10.4 percent in 1935. In spite of this tendency, however, the factor of skill still keeps the industry centered in its northeastern location and its custom branches remain in centers of population.

Although the industrial shifts that have attracted most attention have been these movements to the South, the movement westward has been more general and at least equally significant. Agricultural activity has, of course, moved westward with the opening up of new lands and the withdrawal of old lands from cultivation in the eastern areas. The cultivation of specific crops, such as cotton, in particular, has moved west to take advantage of rich and fresh soil, reducing older cotton areas to a competitive disadvantage. Industries serving the consumer have followed the population westward. The shoe industry moved from Massachusetts to New York, Illinois, and Missouri to gain the combined advantage of nearness to markets and nearness to raw material. Originally almost wholly localized in Massachusetts, the proportion of the shoe workers in that State had already dropped to 40.3 percent by 1909 and was down to 21.7 percent in 1935. The shift of iron and steel westward from Pennsylvania into Ohio and the Chicago area has reflected a combination of factors, the declining proportion of the industry controlled by the United States Steel Corporation and the relative growth of the companies operating in Ohio and Indiana, and also the shift by the United States Steel Corporation of its operations from its Pittsburgh plants to its newer Lake Michigan

units, favorably situated to utilize the Lake Superior ores.

The concentration of the rubber tire industry in Ohio reflects the absorption of the industry by a few large companies and the geographical consolidation of their operations. In 1909, the manufacture of rubber tires was scattered through New Jersey, Pennsylvania, Connecticut, New York, and Indiana, as well as Ohio which then accounted for only 39 percent of employment. In 1935, 68 percent of rubber tire employees were located in Ohio. The process of concentration is particularly striking in this industry in view of the fact that the raw material is imported and that the location in Ohio has no relation to the sources of raw material. This is a characteristically foot-loose industry, able to locate virtually anywhere. At the present time there are signs that the industry may again become more dispersed as certain of the large rubber concerns have erected plants in the South and in California.

Women's clothing, also a foot-loose industry, has shown the opposite tendency. In 1909, two-thirds of the women's and children's clothing was produced in New York State and 62 percent in New York City itself. In 1935 only half was produced in New York State, and still less in New York City. This movement out of New York has meant a shift of the industry westward with population, the beginning of a challenge by Hollywood to the style supremacy of Broadway, and dispersion out from the metropolitan center to the peripheral regions of New Jersey and Connecticut in search of lower rents and freedom from labor organization.

It is difficult to appraise the net results of these industrial shifts beyond the rough picture of the regional distribution of employment within the industrial counties given in table 11 and the evidence of stability in chart 1. There is no doubt that the Great Lakes, Southern Piedmont, and Pacific areas have grown in proportion to the older regions of New England and the Middle Atlantic States. But the gross pattern of industrial location was already established 50 years ago. The developments of these years have modified but in no substantial way reshaped this pattern.

In this chapter only the bare outlines of the geographical structure of production have been sketched. Almost no attention has been given to the more detailed characteristics of the geographical structure, to the multitude of factors which combine to determine geographical location in particular cases, to the degree of balance in the use of resources between regions or the influences of transportation and freight rates on geographical location. Each of these would constitute a special study in itself. Instead, the chapter has been almost wholly concerned with indicating in a very rough fashion the extent to which the geographical structure of production is conditioned by the necessity of carrying on some activities close to particular resources and other activities in close proximity to the consumers; the influence of historical factors in determining the location of the activity not directly controlled by the location of resources or consumers; the geographical flow of goods through the successive steps of production; and the relative stability in the location of industry, particularly its continued concentration in the leading industrial counties.

This sketch of the geographical structure of production should serve to make more concrete the manifold activity of the millions of persons who compose the American economy. It indicates the regional specialization and the geographical flow of goods which are involved in the highly organized use of resources. It is partly because of the variety of resources making possible specialization of production, one region providing cotton, another wheat, another cattle, each concentrating on the activity appropriate to its natural resources, that a high level of living could be developed in all parts of the country. In the face of the complexity of organization involved in the interchange of goods between regions, and the failure to deal with the problems it introduces, the actual level of living falls short of the potential. Only as this geographical complexity is kept constantly in mind can the structure of production be envisaged in all its main aspects.

# CHAPTER V.—THE STRUCTURE OF PRODUCTION—FUNCTIONAL

The geographical structure discussed in the preceding chapter gives only one dimension of the structure of production. The functions performed and the interrelationships among them are central to the structure of physical production.

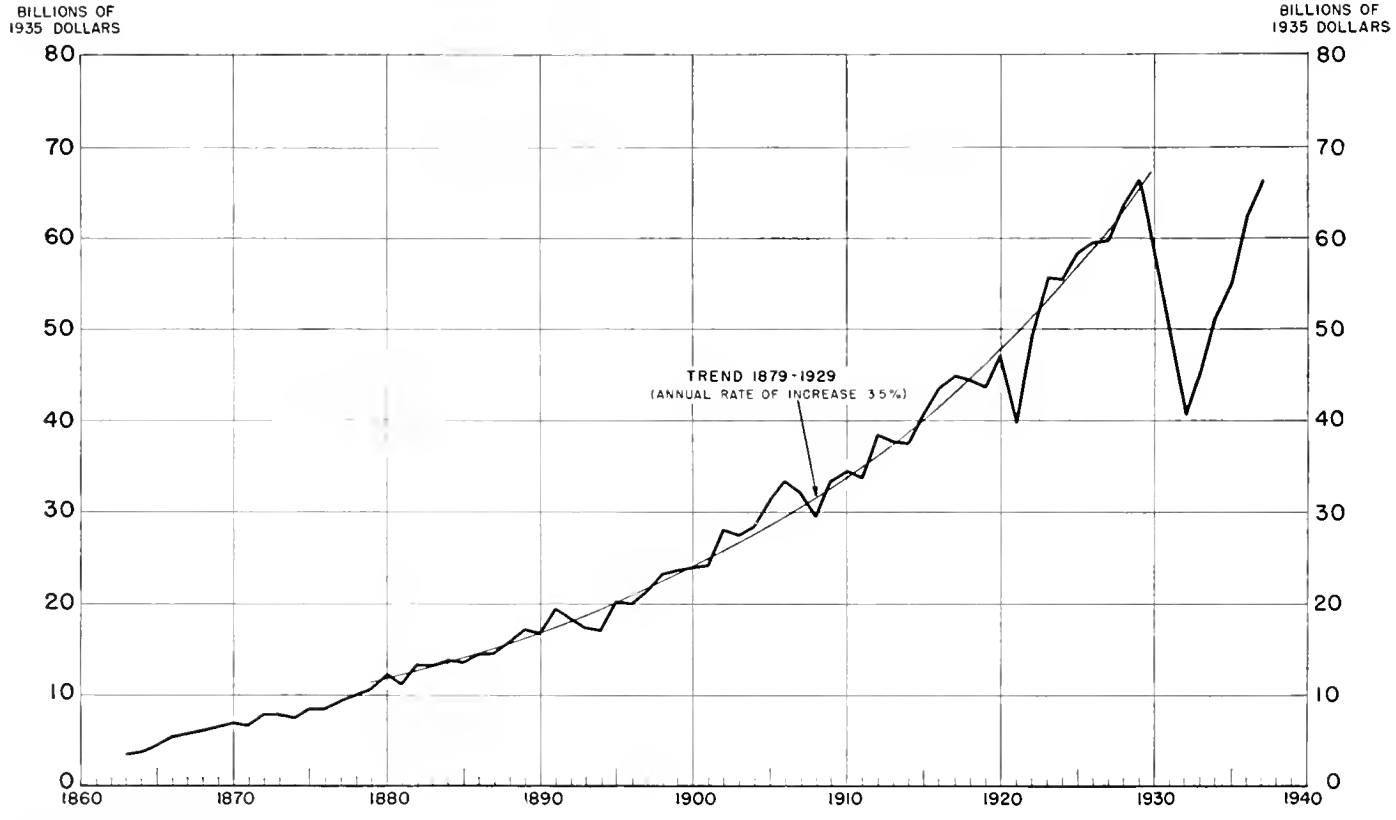
National productive activity in 1935 was carried on by the equivalent of 41 million full-time persons and made use of nearly 365 billion dollars[1] worth of land, buildings, equipment and inventory and resulted in production with a value of approximately 55 billions of 1935 dollars. Measured in 1935 prices, national production has grown from less than 5 billion dollars annually in the 1860's to 66 billion dollars in 1929. This is shown in chart I, all figures being stated in 1935 dollars. The long-time growth is broken at intervals by depressions of which that in 1921 and that beginning in 1929 are of greatest magnitude. The 1935 figures, falling in the latter depression, represent very much less than full employment of the available resources, though a considerable increase over the 1932 low. It is the structural characteristics of this production, analyzed in terms of function, with which this chapter is concerned.

In this analysis of the structure of production the main objective will be to set forth (1) the proportionality of different activities, (2) the post-war trends of change, (3) the sensitivity of different types of activity to depression, and (4) an indication of the relation of actual production to potential production. For purposes of analysis, total production will be broken down along two lines; first, according to the major types of activity such as agriculture, manufacturing, and trade and their subdivisions, and secondly according to durability of product. For the first set of categories, the manpower employed and, where possible, the capital employed will be shown. For the varying degrees of

[1] See Appendix 18, section 5.

CHART I

TOTAL PRODUCTION IN THE UNITED STATES 1863-1937




Source: Appendix 18, section 6.

durability, no statistical basis has yet been laid for showing manpower and capital employed and this analysis will consequently have to be in terms of output.

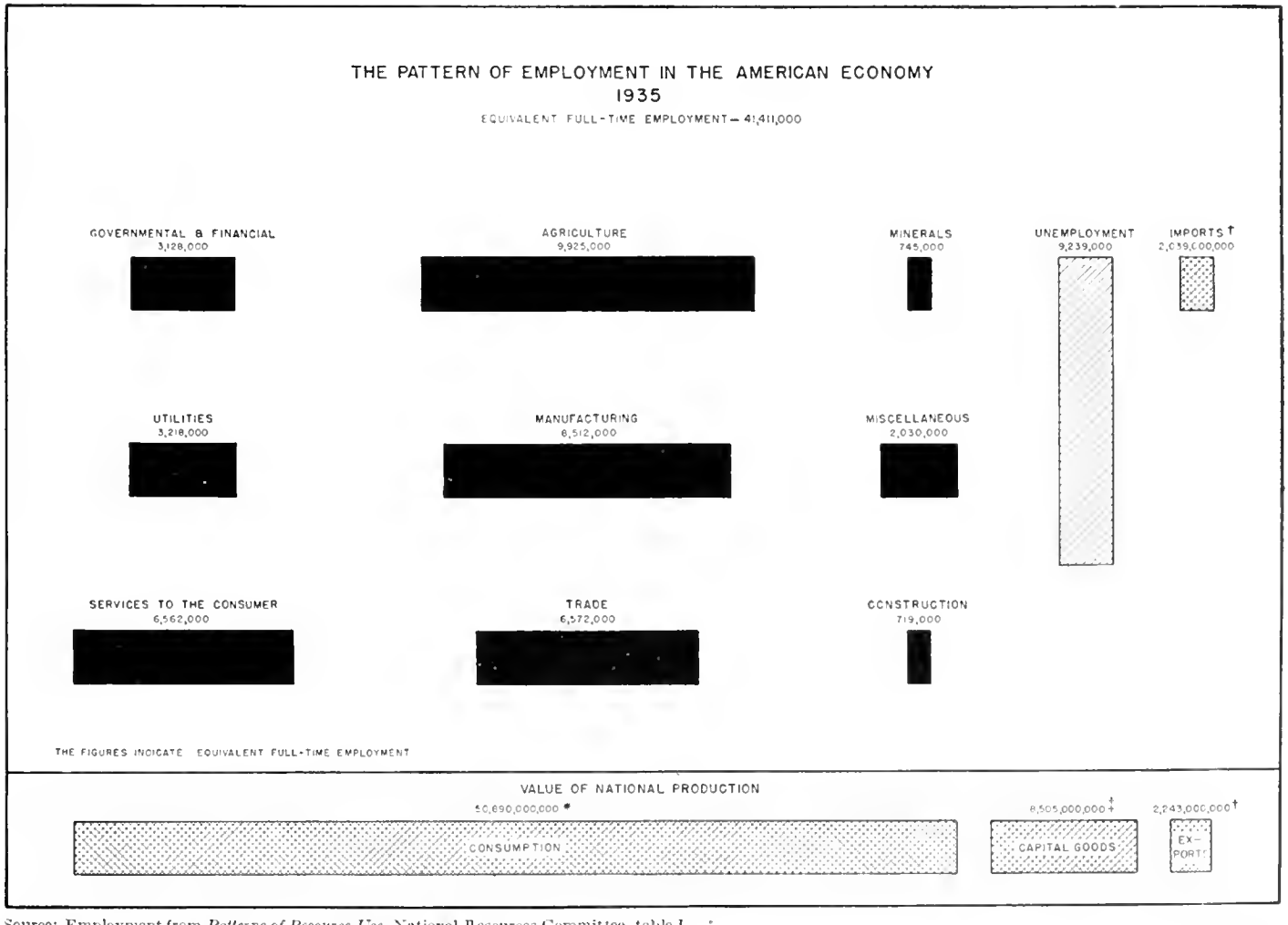
### Major Types of Productive Activity

The proportionality of different types of activity is clearly indicated in chart II. This chart shows the total manpower employed in 1935 divided into nine main segments. The black areas on the chart represent the amount of manpower employed in each segment, stated in terms of equivalent full-time employment, part-time employment being reduced to the equivalent full-time.[2] The chart is not aimed to distinguish between Government activity and corporate or private activity but rather to indicate the magnitude of different functions of production regardless of who carries them on. For this reason Government and finance are grouped together, both being to a considerable extent concerned with the facilitating of production, while the Postal Service has been grouped among the utilities with other forms of communication, and public education has been grouped with private education as a service to the consumer. Undoubtedly, some further regrouping of government data would be desirable, such as combining road building with other transportation service and municipal power plants with other utilities, but data are not available to make a complete allocation of governmental activities to the functions performed, and such allocations would not alter the general picture significantly.

The material in chart II is so arranged as to place at the top the activities which are, on the whole, furthest from the ultimate consumer and at the bottom those closest to ultimate consumption. At the right of the chart is a vertical bar reflecting the magnitude of unemployment in 1935. A study of this chart corrects the impression, so frequently held, that the bulk of

[2] The exact meaning of "full-time" used in these estimates varies somewhat, but as nearly as the statistical data allow it is the total number of man-hours worked in an industry divided by the number of hours which would be worked by a person working full-time for a year at the hours prevailing in the particular industry.

CHART II

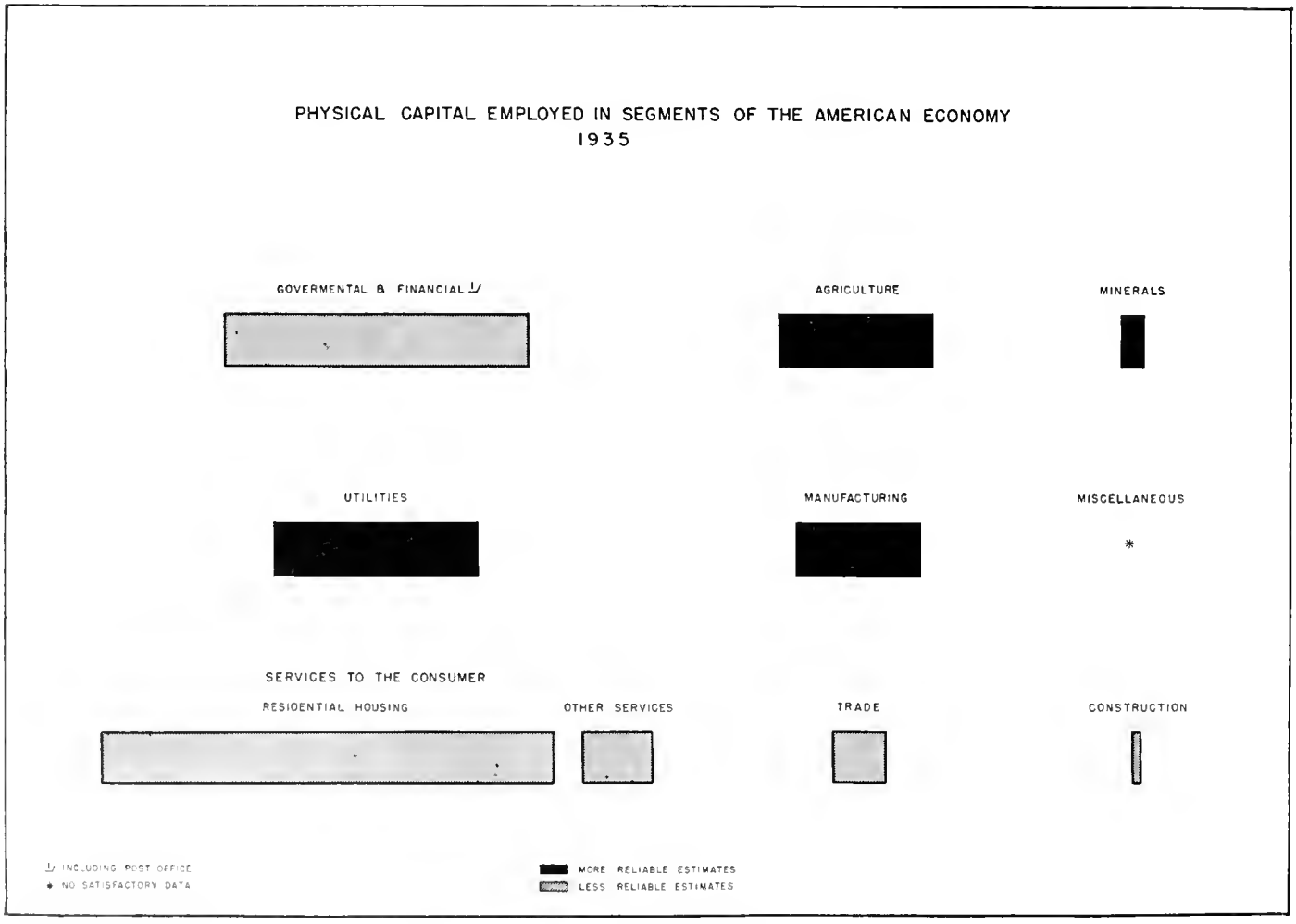



Source: Employment from *Patterns of Resource Use*, National Resources Committee, table I.
† Department of Commerce, Bureau of Foreign Commerce, values in dollars.
‡ Simon Kuznets, *Community Flow and Capital Formation*, table vii-2; includes producers' durable, business and public construction and repairs and servicing, the last being derived from *Census of Manufactures, 1935:* values in dollars.
* *Consumer Expenditures in the United States*, National Resources Committee, preliminary; figures in dollars.

economic activity is manufacturing. This segment employed a little over 20 percent of the total manpower which was employed in 1935. More manpower was engaged in agriculture than in manufacturing, and nearly as much in wholesale and retail trade, and also in such services to the consumer as education, professional, personal, and domestic services, recreation, and amusement. The small amount of employment in construction reflects very much lower than average activity in that field in the particular year. On the whole, this picture of manpower employed in the different segments of the economy is the best single guide to the role of each segment in the national economy.

A further guide is provided by the volume of physical capital employed in each segment. A very crude estimate of the value of the land, buildings, equipment, and inventories employed in each segment is given in chart III. Estimates are hard to make in this field, partly because of inadequate data but more especially because of the subjective character of the whole process of valuation. For agriculture, the estimates are those of the census of 1935, while for utilities and manufacturing estimates have been made from income tax returns based on the book values reported by corporations. Estimates for the other segments are only crude approximations. The classification of industries is identical with that in the preceding chart, and the blocks of manpower and physical capital are roughly comparable except for Government, services to the consumer, and, construction. In the case of the first, an important proportion of the physical capital is made up of the public domain and the public highways. These bear little relation to the manpower currently active in the production of government-rendered services. In the case of services to the consumer, residential housing accounts for the bulk of the capital values in this segment and renders services to the consumer with relatively little manpower currently employed, while the manpower engaged in serving the consumer in professional, personal and domestic services, education, and recrea-

CHART III




Source: Appendix 18, section 5.

Bars are presented in proportion to the money value equivalent of physical capital.

tion uses relatively little associated physical capital. The estimate of physical capital in the construction industry is very unreliable.

Table I shows the value of the physical capital per equivalent full-time worker for the six segments where the basic figures are sufficiently accurate for the ratio to have significance. The table should be regarded as only suggestive partly because of the crudity of the estimates of physical capital and partly because the proportion of the physical capital which was actually in operation in 1935 is not known. It does indicate the larger physical investment per worker in the transportation, communication, and power fields, the relatively small investment in lands, buildings, and equipment per worker in trade and consumer services, and the relatively similar investment per worker in agriculture and manufacturing.

A third guide in giving the picture of productive activity is the contribution to production made by each segment of the economy. Chart IV gives for each segment an estimate of the income produced by that segment. The proportionality is approximately the same as that of manpower in the different industries except that the value of the agricultural contribution was smaller and the contribution of government and of the utilities was greater than the corresponding manpower ratio.

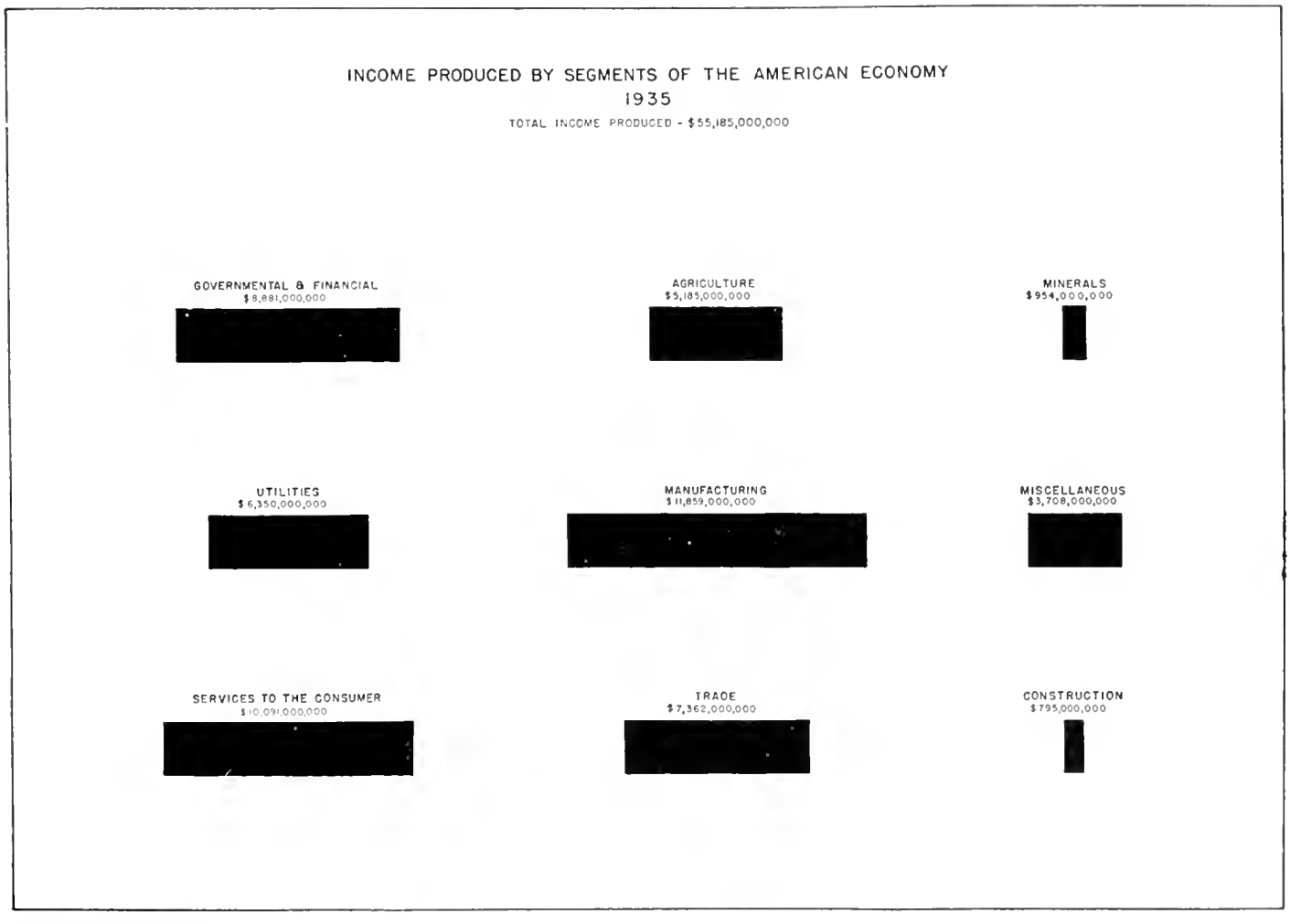
TABLE I.— *Value of Land, Buildings, Equipment and Inventories per Equivalent Full-Time Worker, 1935*

| | |
|---|---|
| Public Utilities | $11,900 |
| Mining | 8,700 |
| Agriculture | 3,900 |
| Manufacturing | 3,700 |
| Services to the consumer [1] | 3,700 |
| Trade | 2,000 |
| Crude average for whole economy | 4,600 |

Source: See appendix 18, section 5.

[1] Exclusive of residential housing and education.

CHART IV

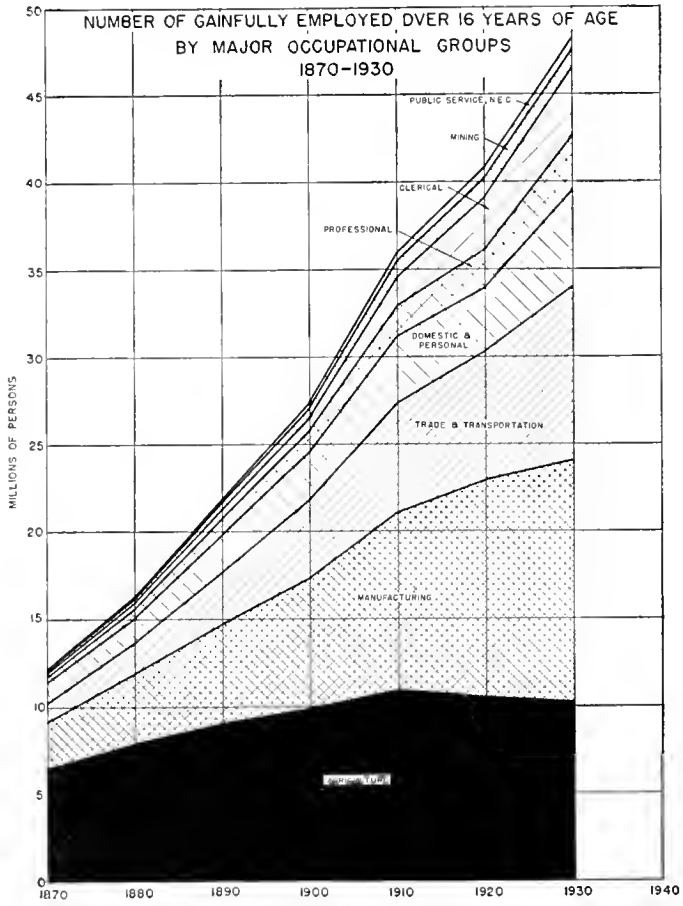



Source: Appendix 18, section 7.

The three charts above give a very clear picture of the proportionality of the different types of economic activity as they were carried on in 1935. The real structural characteristics of production, however, are only to be found by examining economic activity through time. A first crude picture of the changing relative importance of different segments can be obtained from Charts V and VI which are derived from the *Census of Occupations*. The first shows for each census year the absolute number of persons reporting themselves as gainfully employed in each of the main types of activity while the second indicates the proportion of the total in each segment.

The most striking indication of the charts is the relative decline of the role of agriculture in the national economy. While the number of persons gainfully employed in agriculture increased gradually from 1870 to 1910, in the 60 years from 1870 to 1930 agriculture dropped from 53 percent of the total gainfully occupied

CHART V




Source: Report of the President's Research Committee on Social Trends, *Recent Social Trends in the United States, 1933*, table 6, page 281. Figures differ slightly from those in Census reports; adjustments have been made to obtain comparable figures.

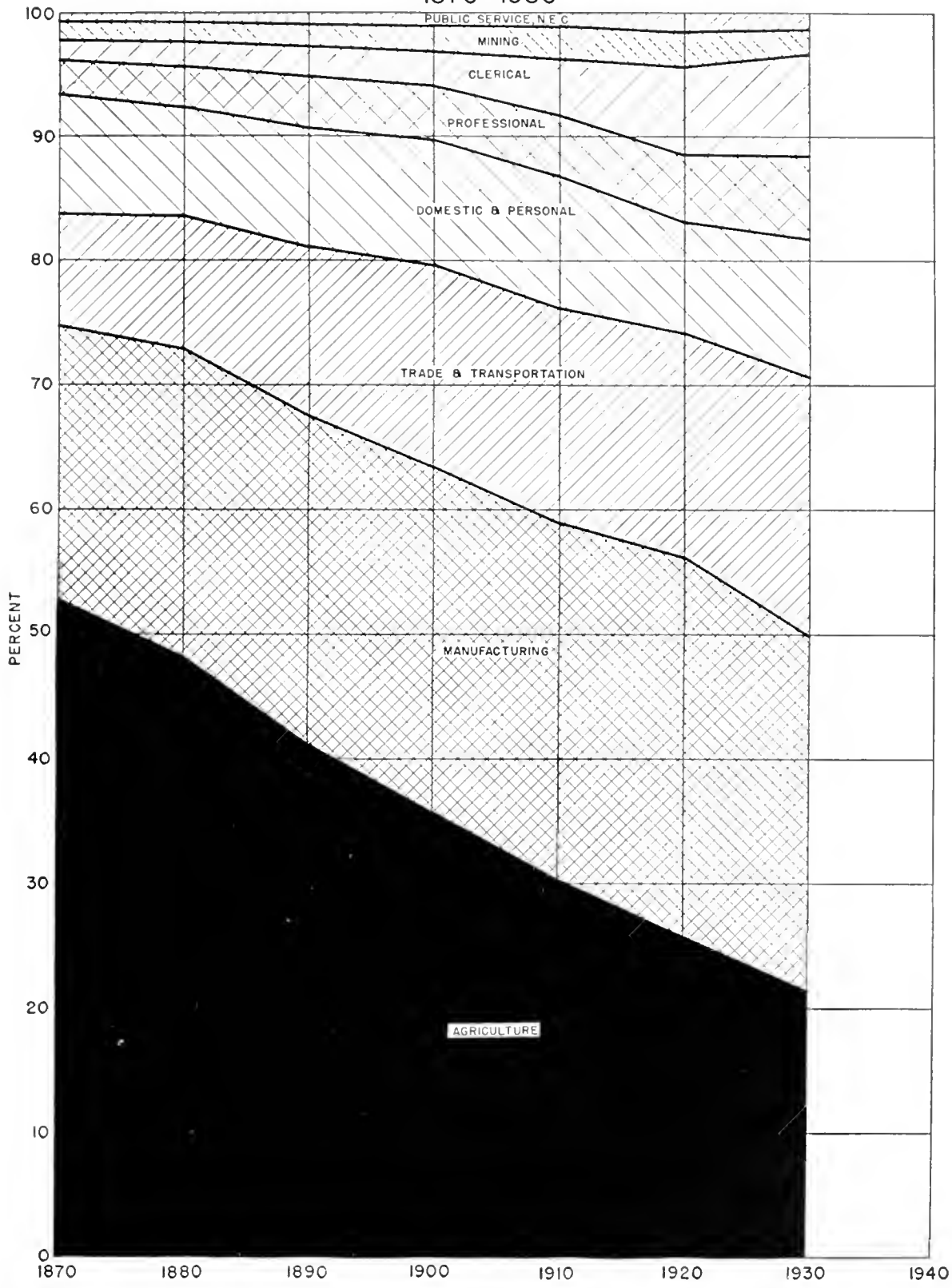
to little more than 21 percent. The great increases have come in trade and transportation and manufacturing and clerical so that their proportion of the total has increased from 32 percent in 1870 to 57 percent in 1930. Thus from 1870 to the present time the national economy has shifted from an economy which had been dominantly agricultural and in which more than half the workers were agricultural to one which is predominantly industrial. This has shifted the whole character of the productive structure away from that associated with agricultural production and toward that associated with industry.

Estimates of employment and the trends of activity since the World War are shown in terms of employment for each segment in chart VII. The trends are adjusted for depression activity and represent the trends of change in the manpower employed in each segment which could have been expected if reasonably full economic activity had been maintained. The two extractive segments, agriculture and mining, show a gradually declining trend of employment even after adjustment for depression, while manufacturing and the utilities show only a slightly rising trend in the post-war period. The areas of expanding employment have been in the rendering of direct services to consumers, in the field of trade, and in the fields of government and finance. No trend can be drawn for employment in construction for reasons which will become apparent in the discussion of production in relation to durability. Leaving construction out of account, it is apparent that the recent trends of employment have shifted the relative emphasis in productive activity away from the extractive and manufacturing industries and have increased the proportion of the available manpower engaged in rendering services either to the consumer or to the whole economy.

To the structure of production indicated here through time, another dimension must be added, the pattern of sensitivity to changes in consumer income and in the level of productive activity. In Table II below, the segments are arranged in order of the increasing sensitivity of their production to depression as revealed by the sensitivity of their employment. Agriculture and government, the least sensitive, are at the top; construction and mining, the most sensitive, are at the bottom. A rough measure of sensitivity can be obtained by comparing the level to which employment had fallen in 1932 with the level of employment called for in that year by the post-war trend. In Table II the ratio of actual employment to the level called for by the post-war trend is given for each segment. Here the essential stability of agriculture and government and the great instability of construction, manufacturing, and mining are clear.

CHART VI

## PROPORTION OF GAINFULLY EMPLOYED OVER 16 YEARS OF AGE BY MAJOR OCCUPATIONAL GROUPS 1870–1930

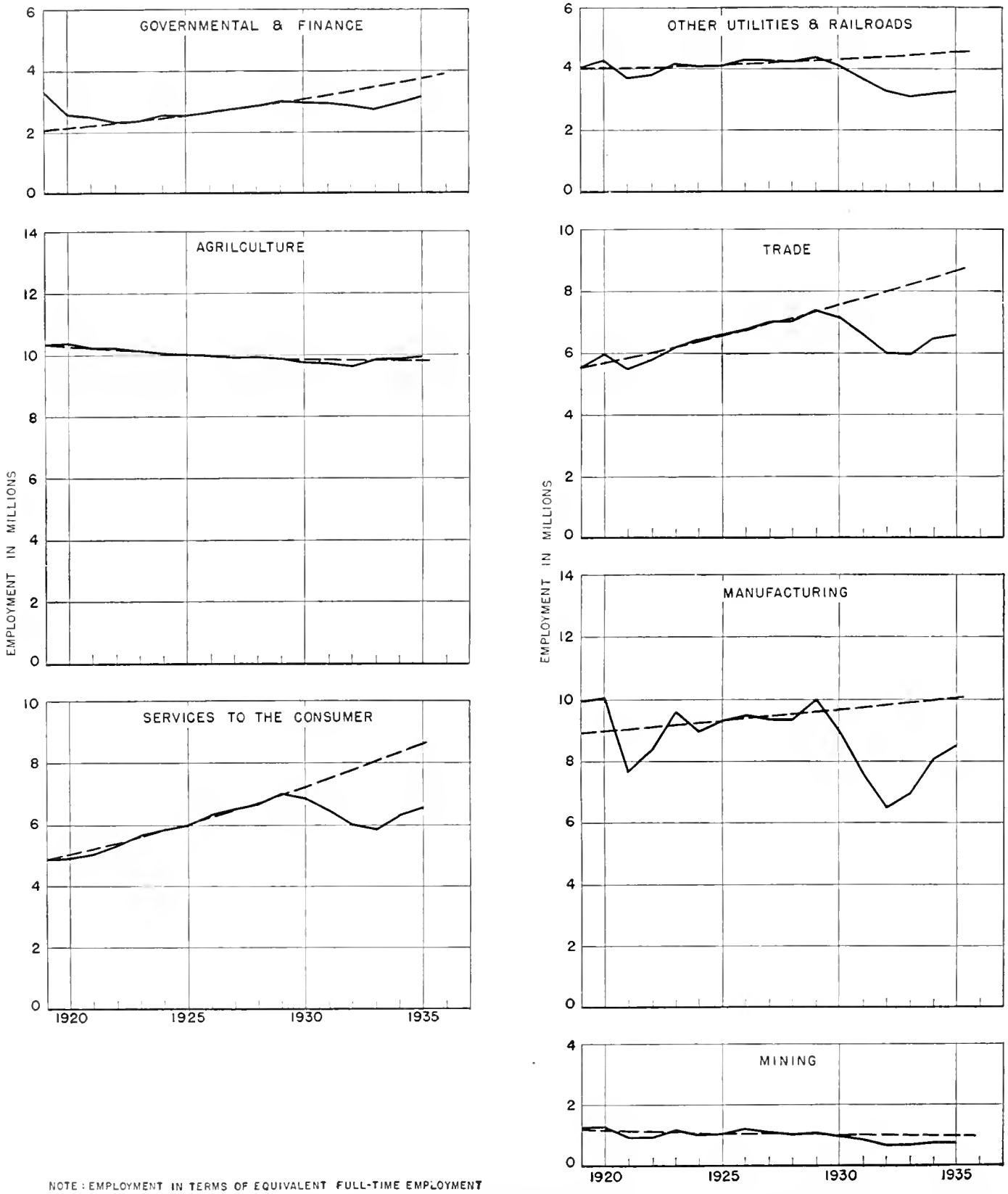



Source: Report of the President's Research Committee on Social Trends, *Recent Social Trends in the United States, 1933*, table 6, page 281. Figures differ slightly from those in Census reports; adjustments have been made to obtain comparable figures.

CHART VII

# TREND OF EMPLOYMENT FOR SEGMENTS OF THE AMERICAN ECONOMY

## 1919 - 1935




NOTE : EMPLOYMENT IN TERMS OF EQUIVALENT FULL-TIME EMPLOYMENT

Source: *Patterns of Resource Use*, National Resources Committee. The trend for each segment is computed from the data for the years 1923–29, by using a curve representing a compound interest rate of growth.

TABLE II.—*Sensitivity to depression of employment in segments of the American Economy*

| Segment | Proportion of employment indicated by trend line which is represented by actual employment in 1932 [1] | Segment | Proportion of employment indicated by trend line which is represented by actual employment in 1932 [1] |
|---|---|---|---|
| | *Percent* | | *Percent* |
| Agriculture | 97.8 | Trade | 75.2 |
| Federal, State, and local government and banking and finance | 84.4 | Manufacturing | 65.5 |
| Services to consumer | 77.2 | Mining | 59.5 |
| Utilities including railroads | 73.9 | Construction | 59.1 |
| | | Total economy | 73.2 |

Source: Based on *Patterns of Resource Use*, National Resources Committee. The trend for each segment is computed from the data for the years 1922–1929 by using a curve representing a compound interest rate of growth.

[1] Ratio of actual to trend values.

More light on the structure of production can be obtained by breaking down each major segment into greater detail and by tracing through the flow of goods from resources to the consumer. The flow of physical goods toward the consumer and of money from the consumer back to those who contribute to production is typified by the two examples shown in charts VIII and IX. In chart VIII the physical flow of ore, coal, limestone, entering the iron and steel industry is traced through and the proportionate disposal is shown at each stage of processing and in the final disposal to the fabricating industries. In chart IX the consumer food dollar is traced back to show what proportion went to each of the productive processes involved. Of this dollar, 25 cents went to the retailer, 9 cents to the wholesaler, 20 cents to the processor, and 41 cents to the farmer. The remaining 5 cents paid for transportation at each of the various steps. The proportions shown in these charts for physical volume and for dollar expenditure are not necessarily representative of other physical products or of dollars of expenditure for other types of goods. They serve merely as examples of proportionality in one specific type of flow and one specific category of expenditure.

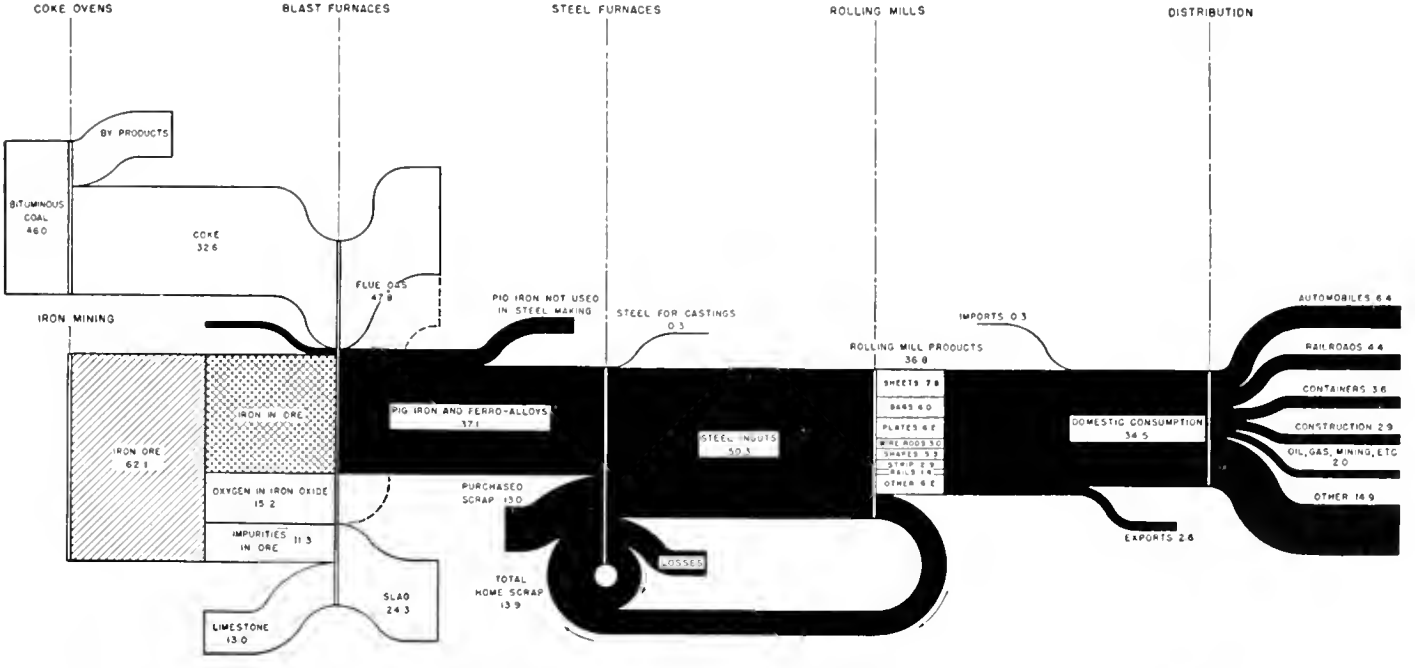
For the whole economy, the proportionate activity at the several stages in the flow from resources to consumers is shown in some detail in chart X. Here the various stages of extracting, processing, fabrication, and distribution are shown in the successive rows of the chart. The manpower employed in raising basic agricultural products and in mining is shown in the top row, that in processing these basic products, and further steps in manufacturing in the next two rows, wholesale distribution in the next and finally retail trade and

CHART VIII

PHYSICAL FLOW FROM RAW MATERIALS TO FINISHED PRODUCTS

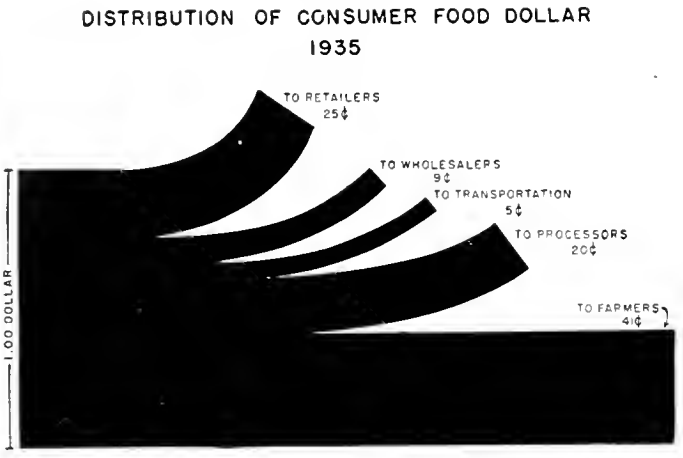
IN THE IRON AND STEEL INDUSTRY 1937

(ALL FIGURES IN MILLIONS OF GROSS TONS)




Source: Unpublished study by Dr. Gardiner C. Means for the National Resources Committee, *Capital Equipment Requirements of the Iron and Steel Industry.*

CHART IX




Source: Appendix 18, section 8.

service to the consumer at the bottom. The preceding chapter has already shown that these successive steps follow roughly a geographical pattern from the location of natural resources to the location of consumers. From this chart it is possible to trace through the various steps, seeing the proportionate volume of manpower used at each stage. Thus, it is possible to compare the man-power engaged in raising cattle and hogs with that engaged in meat packing, in tanning leather, and in the manufacture of shoes and other leather products. Forest products move in two different directions, some into paper and pulp thence to other paper products and into books and newspapers, others into lumber mills and thence to furniture and into the construction industry. Minerals too may be traced through, coal and iron ore into iron and steel and thence to iron and steel products and to their final fabrication largely in automobiles and various types of machinery. The bulk of these products then travel through the channels of trade to the ultimate consumers. At the left of the chart the services to the economy are indicated, public services of the Federal, State, and local governments, banking and finance, the transportation and communication services, and electric power. The proportionate distribution of manpower employed in the various services to the consumer is shown at the bottom.

Of course, the functional structure of the economy does not follow so neat a pattern of successive levels of activity as this chart would indicate. The basic resources do indeed have to pass through successive stages but some travel much more directly to the consumer in a relatively unprocessed state such as fresh fruit and vegetables, fluid milk, and household coal, while others such as cotton fibers and iron ore have to pass through a series of processes. For some items, particularly machinery, there is a back flow as fabricated products are used in stages of production closer to the natural resources. On the other hand, those things

TABLE III.—*Trends of employment for 81 segments, stated in terms of 1929 employment* [1]

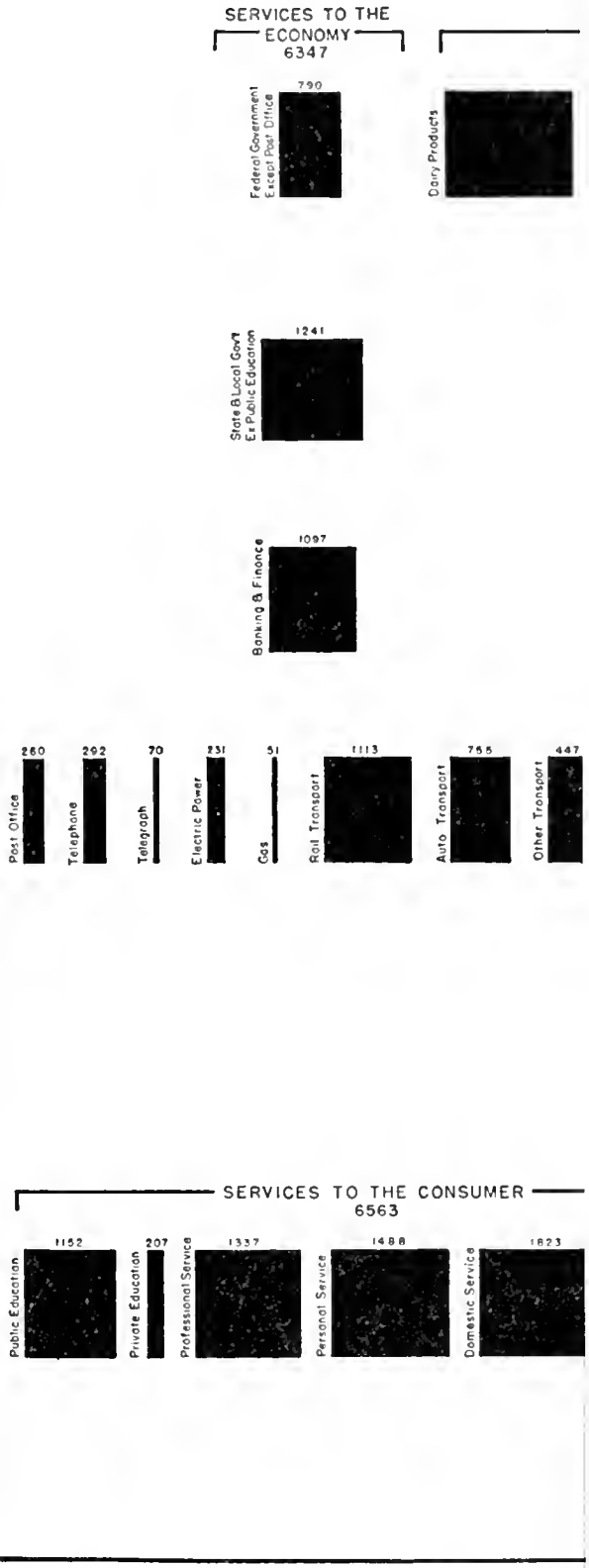
| Code No.[2] | Industry | Percent annual increase [3] | Absolute annual increase |
|---|---|---|---|
| 116 | Rayon yarn | 14.8 | 5,800 |
| 7 | Electric power | 8.4 | 22,800 |
| *1* | *Federal Government, excluding Post Office* | *6.9* | *40,000* |
| 607 | Miscellaneous service | 6.6 | 20,400 |
| 302 | Business service | 6.1 | 15,900 |
| *104* | *Canning and preserving* | *5.8* | *6,000* |
| 3 | Banking and finance | 4.2 | 50,000 |
| *606* | *Recreation and amusement* | *4.1* | *10,100* |
| *141* | *Automobiles* | *4.0* | *17,700* |
| 120 | Dyeing and finishing | 3.8 | 3,000 |
| 603 | Professional service | 3.8 | 48,000 |
| 604 | Personal service | 3.7 | 60,000 |
| 602 | Private education | 3.5 | 7,300 |
| 129.1 | Paints and varnishes | 3.4 | 1,000 |
| 500 | Construction | 3.0 | 4,600 |
| 108 | Bread and other bakery products | 2.9 | 5,800 |
| 601 | Public education | 2.8 | 32,000 |
| 401 | Retail trade | 2.7 | 147,000 |
| *5* | *Telephone* | *2.6* | *11,100* |
| 2 | State and local governments | 2.4 | 30,000 |
| 120.1 | Other textiles | 2.3 | 4,200 |
| 10 | Auto transportation | 2.2 | 16,200 |
| *131* | *Petroleum refining* | *2.2* | *1,800* |
| 144 | Electrical machinery | 2.2 | 6,100 |
| 124 | Furniture and related products | 2.1 | 4,100 |
| 605 | Domestic service | 2.1 | 48,000 |
| *137* | *Iron and steel* | *2.0* | *8,400* |
| 126.2 | Printing and publishing (allied industries) | 1.9 | 1,500 |
| *800* | *Miscellaneous industries* | *1.8* | *44,000* |
| 127 | Rubber tires and tubes | 1.7 | 1,400 |
| *128* | *Rubber products (other than tires and tubes)* | *1.7* | *1,100* |
| 134.1 | Pottery | 1.7 | 600 |
| 134.2 | Marble, granite, and other glass products | 1.7 | 1,700 |
| *6* | *Telegraph* | *1.6* | *1,500* |
| *123* | *Converted paper products* | *1.6* | *1,700* |
| *125* | *Miscellaneous lumber products* | *1.6* | *2,400* |
| *118* | *Knit goods* | *1.5* | *3,100* |
| *133* | *Cement* | *1.5* | *500* |
| 8 | Manufactured gas | 1.4 | 900 |
| *138* | *Nonferrous metals (other than copper)* | *1.4* | *900* |
| 138.1 | Copper, smelting, and refining | 1.4 | 200 |
| 139 | Iron and steel products | 1.4 | 6,500 |
| *801* | *Nonwage earners, manufacturing and mining* | *1.4* | *22,000* |
| *121* | *Paper and pulp* | *1.3* | *1,600* |
| 301 | Wholesale trade | 1.3 | 21,000 |
| *4* | *Post office* | *1.2* | *3,500* |
| *126* | *Printing and publishing (newspapers and periodicals)* | *1.2* | *1,500* |
| *126.1* | *Printing and publishing (book, music and job)* | *1.2* | *1,500* |
| *109* | *Other foods* | *1.0* | *1,500* |
| *140* | *Nonferrous metal products* | *1.0* | *2,700* |
| 145 | Machinery (excluding electrical) | 1.0 | 7,900 |
| 900 | Agriculture | .9 | 90,000 |
| *112* | *Leather products, other than leather and boots and shoes* | *.8* | *500* |
| *119* | *Wearing apparel* | *.7* | *3,700* |
| 134 | Clay products, other than pottery | .7 | 700 |
| 146 | Miscellaneous manufacturing industries | .5 | 1,500 |
| *201* | *Crude petroleum* | *.5* | *400* |
| 205–206 | Iron ore | .5 | 600 |
| *115* | *Rayon and silk* | *.4* | *500* |
| *111* | *Boots and shoes* | *.2* | *500* |
| 204 | Mining (nonmetallic) | .2 | 200 |
| *101* | *Butter, cheese, condensed milk, and ice cream* | *−.2* | *−100* |
| *106.1* | *Sugar refining* | *−.2* | *−100* |
| *114* | *Cotton textiles* | *−.2* | *−1,000* |
| *132* | *Glass* | *−.8* | *−200* |
| *135* | *Fertilizer* | *−.5* | *−100* |
| *129* | *Chemicals* | *−.6* | *−1,200* |
| *203* | *Anthracite* | *−.6* | *−900* |
| *103* | *Meat packing* | *−1.1* | *−1,300* |
| *110* | *Confectionery and chocolate* | *−1.3* | *−900* |
| *136* | *Coke* | *−1.4* | *−300* |
| 202 | Bituminous coal | −1.4 | −6,600 |
| 11 | Other transportation | −1.5 | −9,100 |
| *113* | *Woolen and worsted* | *−1.5* | *−2,200* |
| 122 | Lumber and millwork | −1.5 | −7,800 |
| *107* | *Leather (tanning and finishing)* | *−1.6* | *−800* |
| 9 | Rail transportation | −2.1 | −38,000 |
| 105 | Tobacco | −3.1 | −3,600 |
| 103 | Flour milling | −3.7 | −1,000 |
| *143* | *Transportation equipment other than automobiles* | *−9.5* | *−12,900* |

Segments which are italicized are considered to be less reliable; i. e., the index of correlation is less than 0.90.

[1] The employment data are taken from the report, *Patterns of Resource Use*, National Resources Committee, and the industries defined as in that report. The long-time trend is derived from a linear logarithmic regression obtained by relating employment to consumer income and time, using the data from 1919 to 1935. The 1929 employment is calculated from the regression by substituting the value of 64.7 billions of 1936 dollars for consumer income, this being the value of the long-time trend in consumer income when projected to 1929; the 1930 employment is obtained by substituting the value of 66.8 billions of 1936 dollars of consumer income. Agricultural employment was calculated from a linear regression relating employment to consumer income and time, using the data from 1929 to 1936. Federal Government in 1930 was calculated from a trend based on employment data for the years 1933 to 1936.

[2] Code number used in *Patterns of Resource Use*, National Resources Committee.

[3] This is the ratio of the difference in the long-time trend values of employment in 1930 and 1929 to the actual employment in 1929.

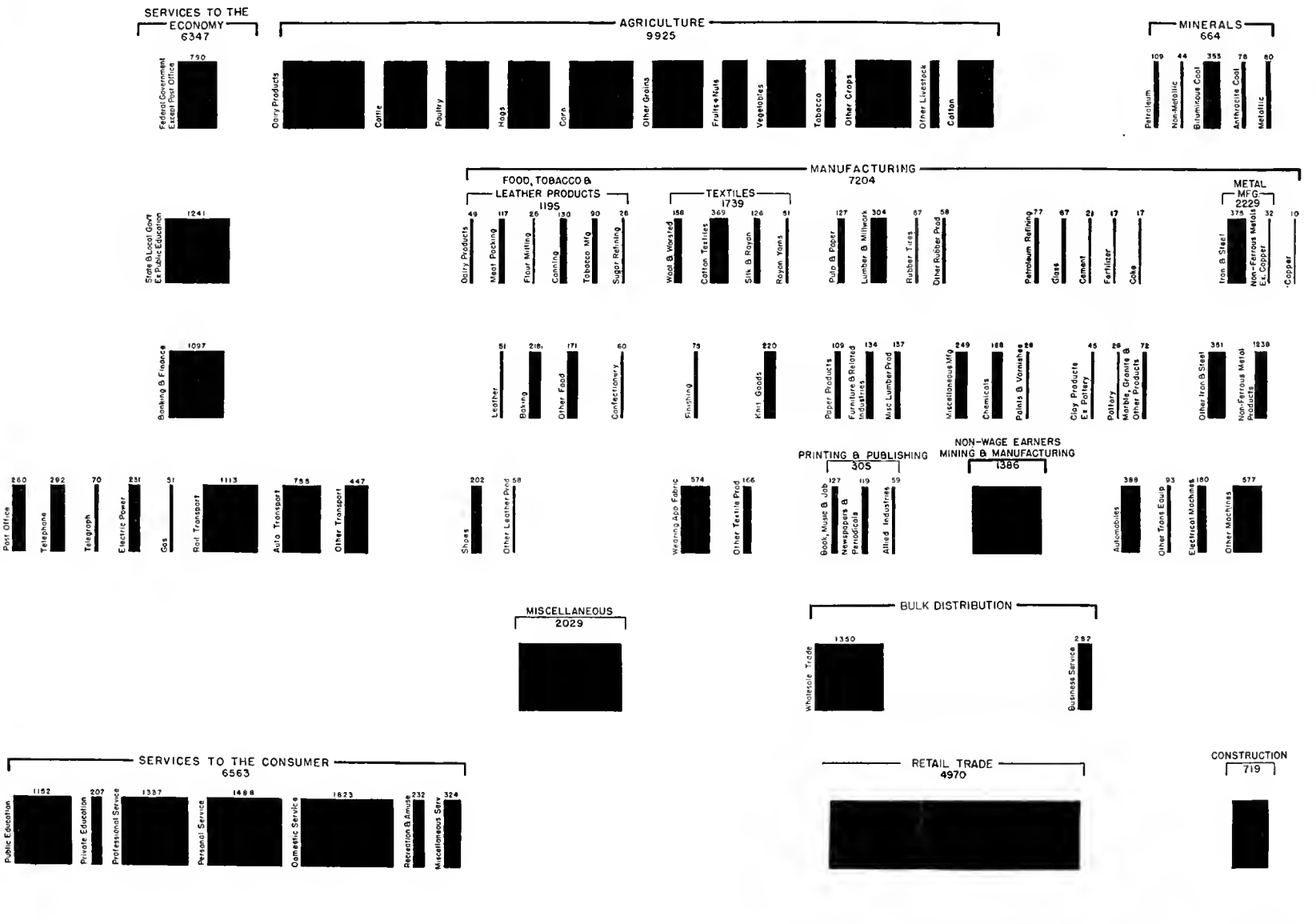



Source: *Patterns of Resource Use*, National Resources Committee, table II.

# THE AMERICAN ECONOMY

## 1935

## EQUIVALENT FULL TIME EMPLOYMENT – 41,411,000




FIGURES FOR EACH SEGMENT GIVE MAN-YEARS OF WORK IN THOUSANDS

ource: *Patterns of Resource Use*, National Resources Committee, table II.

which reach the consumer in the form of services usually originate closer to their final point of consumption. In spite of the actual complexity of the production flows, this chart covering the total manpower used in 1935 does give a rough picture not only of the segments of production in which this manpower was engaged but also the flow relationship from resource to the consumer.

For each of the separate activities presented in chart X it is possible to derive trends similar to those already given for the major segments. In Table III the annual change in manpower engaged in each of 81 lines of activity is given and is stated as a percent of actual employment in 1929. As in the case of the major segments, the figures represent the annual change in employment which could be expected if there were no depression. The industries with growing employment are shown first, then those having little change in manpower engaged and finally those with declining employment.

In order to bring out the significance of these trends, a second figure is given for each line of activity, the number of additional workers that, it is estimated, would have been called for each year, figured on the basis of the workers actually employed in 1929.

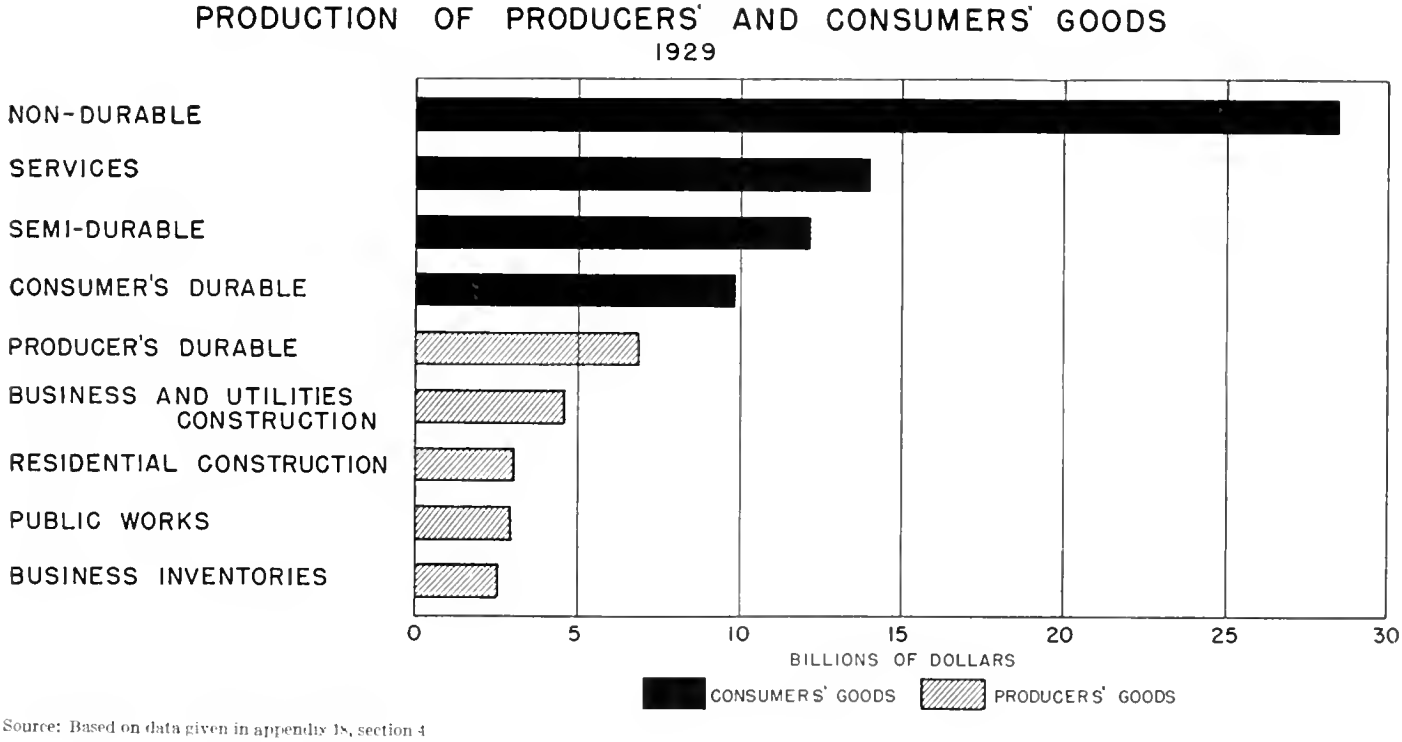
Actual employment for each industry in any year reflects a combination of long-time trend and sensitivity to depression. An examination of the relative sensitivity of industries with rapid, slow, or declining rates of growth, however, does not show any noticeable connection between long-time trend and sensitivity. Differences in sensitivity, on the other hand, are closely related to differences in the durability of goods produced. The discussion of sensitivity will, therefore, be postponed at this point and combined with the discussion of durability which follows.

### Durability of Products

One of the most important characteristics of the structure of production is directly related to the durability of products. The significance of durability was apparent in the analysis of consumer wants, for it there became clear that durable consumer goods were more sensitive to variations in consumer income and consumer expenditure than were nondurable goods. This greater sensitivity of consumers' demand for durable goods finds a direct reflection in variation in the production of such goods and is paralleled by a similar behavior in the production of durable goods for producers.

In chart XI the value of all production in 1929 is divided according to the durability of the product. Approximately three-quarters of the total was production of consumers goods while the remaining quarter was composed of producers goods. Residential construction is included with the latter both because such a large proportion of residences are rented by the occupant and are properly classed as being investments by the owners and because as a matter of social accounting it is convenient to impute rents to owner-occupied

CHART XI




Source: Based on data given in appendix 18, section 4

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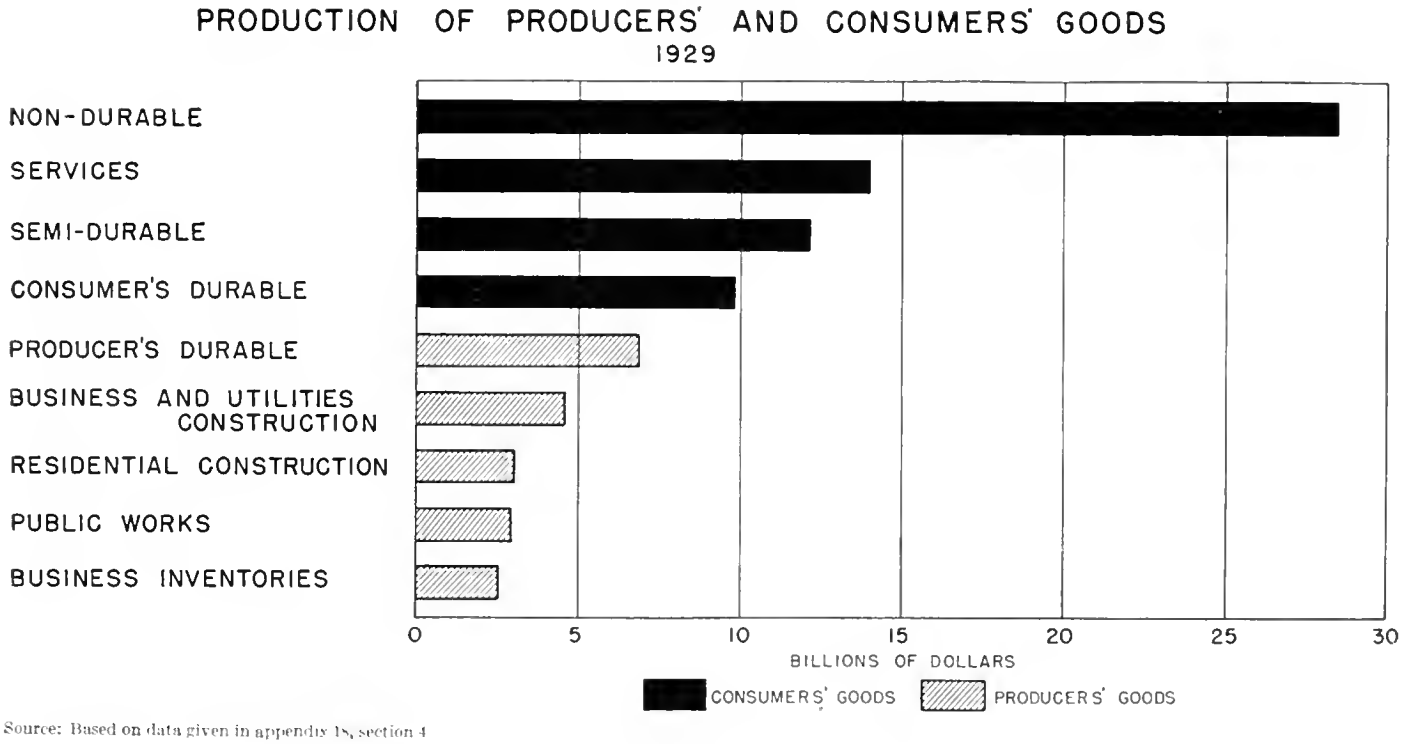
In chart XI the value of all production in 1929 is divided according to the durability of the product. Approximately three-quarters of the total was production of consumers goods while the remaining quarter was composed of producers goods. Residential construction is included with the latter both because such a large proportion of residences are rented by the occupant and are properly classed as being investments by the owners and because as a matter of social accounting it is convenient to impute rents to owner-occupied

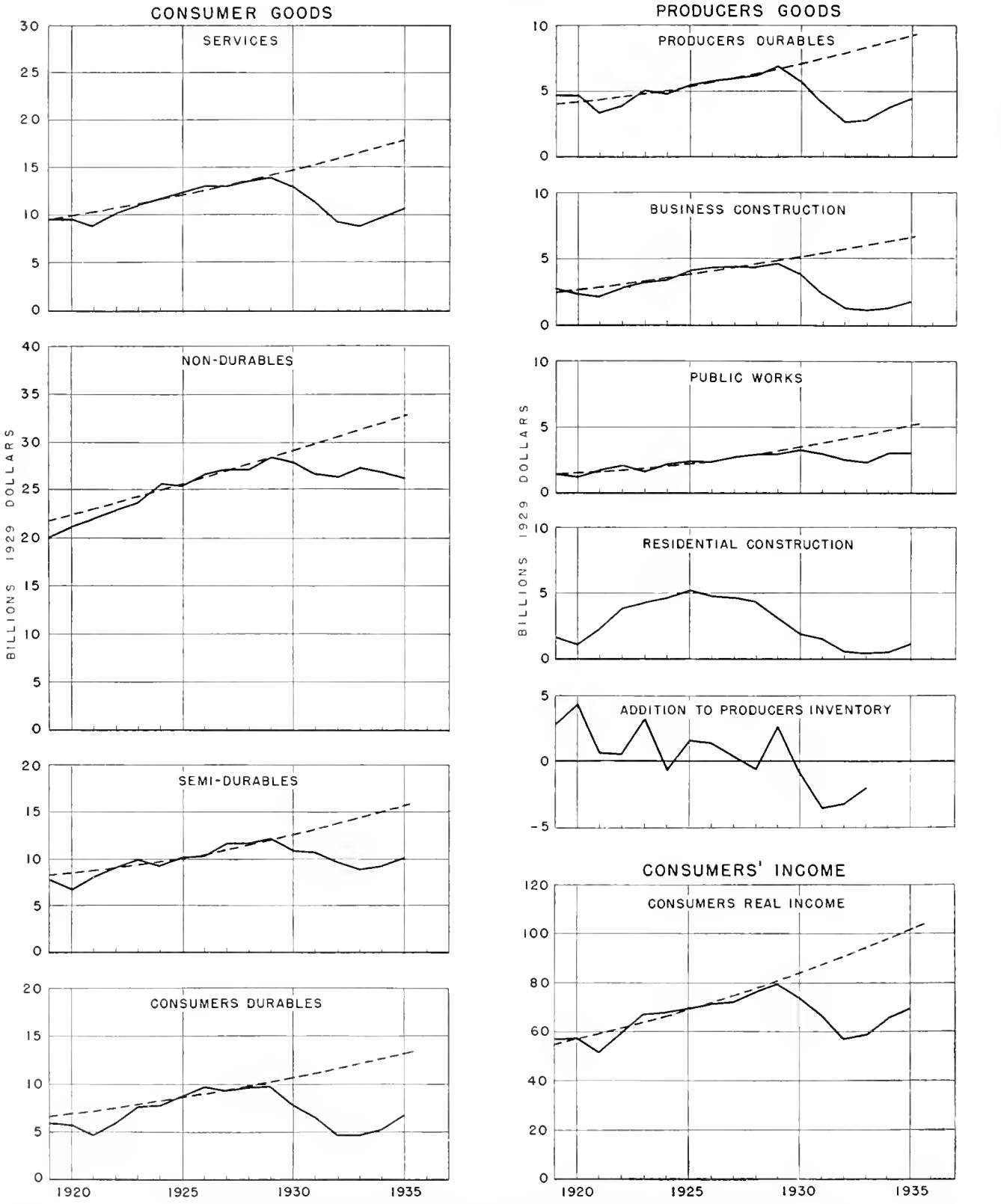
CHART XI




Source: Based on data given in appendix 18, section 4

CHART XII

## TRENDS IN PRODUCTION OF GOODS BY SPECIFIED GROUPS
### 1919 - 1935




Source: Based on data given in appendix 1B, section 4. The trends indicated in the various segments are derived for the years of the period 1923–29, by the use of a compound interest curve. It is assumed that this period reflected conditions of nearly full use of resources.

houses and to treat all purchases of new homes by consumers as investments.[3]

Of the total production in 1929 approximately one-third was made up of durable goods, less than one-fifth of semidurable goods and additions to producers inventory and the remainder or nearly half of the total was made up of consumers nondurable goods and services.

The post-war production in each of these categories of durability is represented in chart XII, and the trend of change indicated except in the case of residential construction and producers inventory for which there is no clear basis for drawing a trend line. As in the charts of the major segments and of individual industries, the trend line shown is the post-war trend after adjustment for the influences of depression. It is notable that in the case of consumer services and nondurable and semidurable consumer goods the trend of increase is low, amounting for the group to approximately 3.8 percent a year, whereas for each of the durable goods categories except residential housing it is appreciably higher, amounting for the group to approximately 5.4 percent. This differential rate of growth is more clearly seen in chart XIII which shows the proportion of total production exclusive of residential construction and additions to inventory in each category from 1919 to 1935. The relatively greater increase in durable goods production from 1919 to 1929 is clear while its greater sensitivity to depression is evident in the data after 1929.

The trend toward greater production of durable goods involves a significant change in the structure of production during the post-war period. There are no comparable data to indicate whether the same type of change was going on before the war, but there is a presumption that the post-war trend is the continuation of a pre-war trend since agriculture which declined so greatly in relative importance was concerned primarily with the production of nondurable and semidurable goods. To some extent both trends reflect the increased industrialization of the country and the shift of its exports from agricultural to industrial products.

The significance of this shift toward durable goods is apparent when the sensitivity to depression of durable goods is compared with that of nondurable goods. In table IV the relation between the actual production in 1932 and the production called for by the post-war trend is indicated. The much greater sensitivity of durable goods and construction than of nondurable and semidurable goods is immediately apparent. Differences in the drop in price for each category are also shown for this table in order to call attention to the possibility that sensitivity in production may reflect insensitivity of price as well as durability of product.[4]

TABLE IV.— *Sensitivity to depression of commodity classes and services*

| Commodity class | Proportion of production indicated by trend line which is represented by actual production in 1932 [1] (percent) | Proportion of 1929 price represented by 1932 price [2] (percent) |
|---|---|---|
| Nondurable goods | 92.7 | 65.7 |
| Semidurable goods | 87.3 | 64.0 |
| Construction of public works | 83.4 | 80.1 |
| Services | 77.5 | 97.9 |
| Consumers durable goods | 60.6 | 84.6 |
| Producers durable goods | 56.1 | 82.5 |
| Business construction | 50.5 | 82.2 |

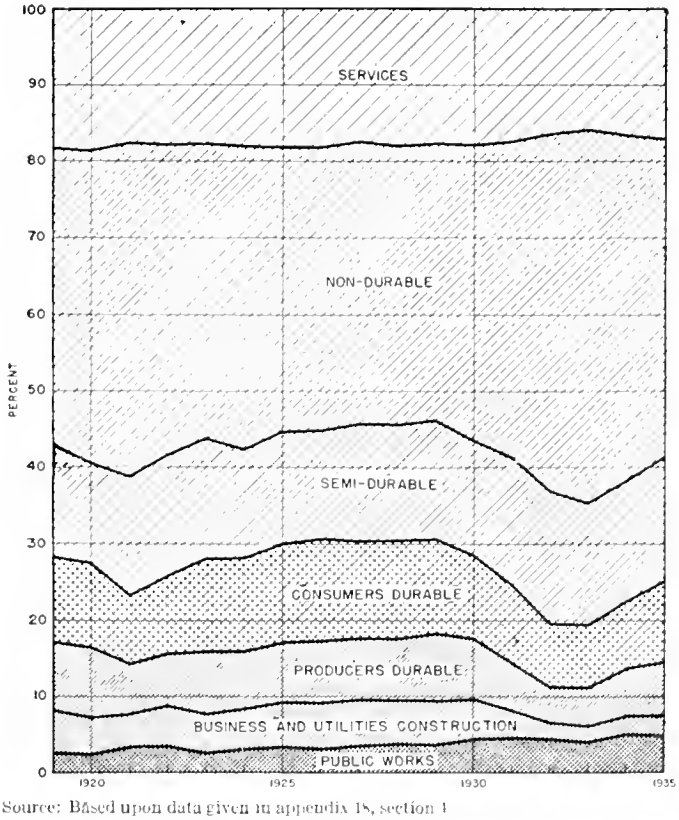
[1] Values upon which the ratios are based are in terms of 1929 prices as given by Simon Kuznets, *Commodity Flow and Capital Formation*, vol. I, p. 185; services is a specially constructed series, shown in Appendix 18, sec. 4. The trend line is based on an exponential regression relating the value to consumer income and time; the trend given by the regression is put through 1926 at a level corresponding to the average value for the years of the period 1923–29 from which the 1932 trend value is derived.

[2] Price ratio obtained from Kuznets, *Commodity Flow and Capital Formation*, vol. I, table II–7, and footnote D of table VI 5. The price ratio for services is from a specially constructed index shown in appendix 18, sec. 4.

[4] For further discussion of the relation between price behavior, durability, and sensitivity to depression, see chap. VIII

CHART XIII

PROPORTION OF GOODS AND SERVICES BY DEGREE OF DURABILITY,

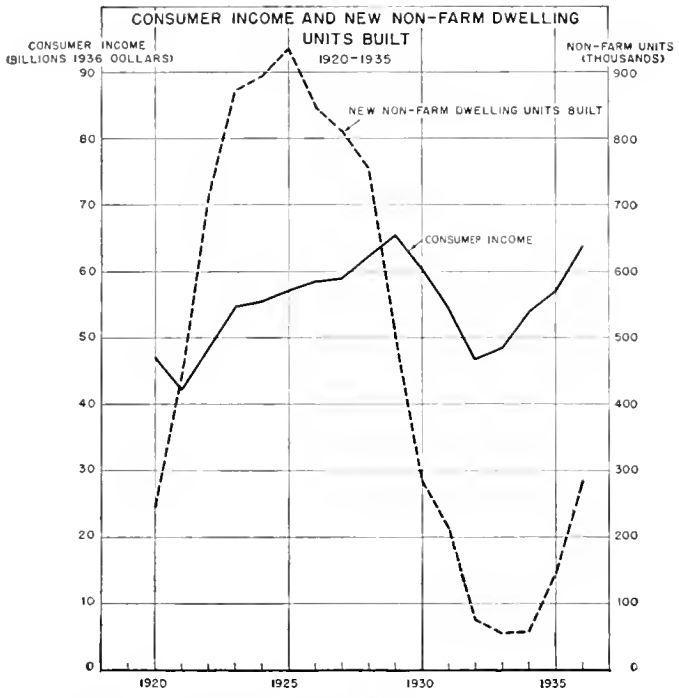



Source: Based upon data given in appendix 18, section 4

1919–1935

[3] Automobiles and other consumer durable and semidurable goods could logically be treated in the same way but their durability is usually less than that of residences and they are rented to a very much less extent so that no great distortion is introduced by treating such goods as "consumed" when purchased rather than as an investment which renders a series of consumer services through their useful life.

CHART XIV




Source: Based upon data given in Appendix 18, section 9.

Because of the major structural importance of these different categories it seems desirable to examine their behavior in more detail. Examination of chart XII shows that the four categories of consumers goods, producers durable goods, business construction, and public works follow a somewhat similar course, moving down together with depression and moving up with recovery though their trends of change and sensitivity to depression are different. This pattern of behavior appears to be closely related to the variations in consumers real income also shown on the chart. For each of the categories, the post-war peak of production was reached in 1929 along with the peak of consumer income, the depression low was reached in 1932 along with the low in consumer income, or in 1933, the year after the low in income, and each series has recovered considerably above the depression low. This close relation is shown statistically in the table below which gives the proportion of the variation in each of these durability categories which is paralleled by variations in consumers income adjusted for a time factor to account for differences in trend.

In contrast to the other categories of goods, residential construction appears to vary more independently of the variations in consumer income. Such construction reached its peak in 1925 and continued to decline from then until 1933, its low point corresponding roughly to consumer income at its low but in other respects having little relation to the latter. This partial independence of the two series is clearly brought out in chart XIV, which shows both the number of nonfarm dwelling units constructed each year and the size of total consumer income.

TABLE V.—*Percent of variation, 1919 to 1935, which is paralleled by variation in consumers' income and a time factor*

| | |
|---|---|
| Services | 92. 7 |
| Nondurable | 83. 9 |
| Semidurable | 73. 9 |
| Consumers durable | 93. 8 |
| Producers durable | 93. 0 |
| Business construction | 91. 0 |
| Public works | 82. 9 |

Source: Based on data given in appendix 18, section 4. Percent of variation is the square of the index of correlation (adjusted) which is derived from a linear regression (in logarithms) relating production in each category to consumer income and time, using the data for the years of the period 1919–35. The consumer income series is that employed in the report, *Patterns of Resource use*, National Resources Committee. For the data, see Appendix 18, sec. 9, of this report.

A second category bearing only a very crude relation to consumer income is the net addition to producers' inventories. This fluctuates violently and to a considerable extent independently of consumer income though in the depression it is a negative figure and reaches its largest negative value in the year of lowest consumer income. It thus bears some relation to consumer income but not the close relation shown for the first group of items.

In appraising the relation between the different categories of production and consumer income it should be kept in mind that production is both an expression of the producers' reaction to the way consumers dispose of their income and the main source of consumers' income. The lag in durable-goods production suggests that expansion of the production of durable goods other than residential housing follows from the expansion in consumer income and consumer expenditures. This is a possibility which can be accepted as a reliable conclusion only after further research. At the present time it appears as very probable but not conclusively established.

The structure of production insofar as sensitivity to depression is concerned can be made more specific by examining the changes in employment in specific lines of activity. In table VI segments of the economy covering approximately 30 percent of the total employment are arranged in order of their sensitivity to variation in consumers' income. The activities are grouped into five degrees of durability, combining all durable goods in one category and all construction in another category. Inventory does not appear as a separate category since it is not an independent branch of production. The table serves to reaffirm the structural importance of durability. How much this sensitivity of durable goods production is a matter of durability, how much it is a matter of the price inflexibility indi-

TABLE VI.— *Sensitivity of employment to depression in specified segments of the economy*

| Index of sensitivity to depression[1] (percent range) | Services | Nondurable | Semidurable | Durable | Construction |
|---|---|---|---|---|---|
| 0–10 | Federal Government except Post Office.<br>Post Office.<br>State and local government.<br>Telephone.<br>Electric power and light.<br>Banking and finance.<br>Automobile transport.<br>Telegraph. | Flour milling.<br>Cane sugar.<br>Petroleum refining.<br>Butter and cheese.<br>Bread and baking.<br>Meat packing.<br>Newspapers, printing and publishing. | Rayon yarn.[2] | | |
| 10–20 | Transportation other than railroads. | Tobacco.<br>Printing and publishing, except book and music.<br>Chemicals.<br>Paper products.<br>Bituminous coal.<br>Anthracite coal.<br>Manufactured gas.<br>Canning and preserving. | Boots and shoes.<br>Knit goods.<br>Dyeing and finishing.<br>Silk and rayon.<br>Wearing apparel.<br>Glass. | Copper smelting. | Construction. |
| 20–30 | Railroads. | Confectionery.<br>Paper and pulp. | Rubber tires.<br>Leather.<br>Leather products other than shoes.<br>Printing and publishing, book and music.<br>Other textiles.<br>Cotton textiles.<br>Paint and varnish. | Nonferrous metals other than copper. | Cement. |
| 30–40 | | Fertilizer.<br>Coke. | Woolen and worsted.<br>Rubber products, excluding tires and tubes. | Pottery.<br>Nonmetallic mining.[2] | |
| 40–50 | | | | Furniture.<br>Automobiles.<br>Iron and steel.<br>Iron and steel products. | Lumber and millwork.<br>Clay products.<br>Iron ore. |
| 50–60 | | | | Transportation equipment other than automobiles.<br>Other machinery.<br>Electrical machinery. | Marble, granite, etc. |

Source: Based on the data for employment calculated at various levels of consumer income as given in table H of *Patterns of Resource Use*, National Resources Committee. The classification of the segment according to durability is based on table I of appendix 8 of this report.

[1] Sensitivity to depression is defined in this case as the percent increase in employment corresponding to a change in consumer income from 65 to 78 billions of 1936 dollars a 20 percent increase) interpolated from table H of *Patterns of Resource Use*, National Resources Committee.

[2] Estimates are less reliable.

cated in table VI, and how much price inflexibility is itself a matter of durability, are questions whose discussion will be postponed to chapter VIII below.

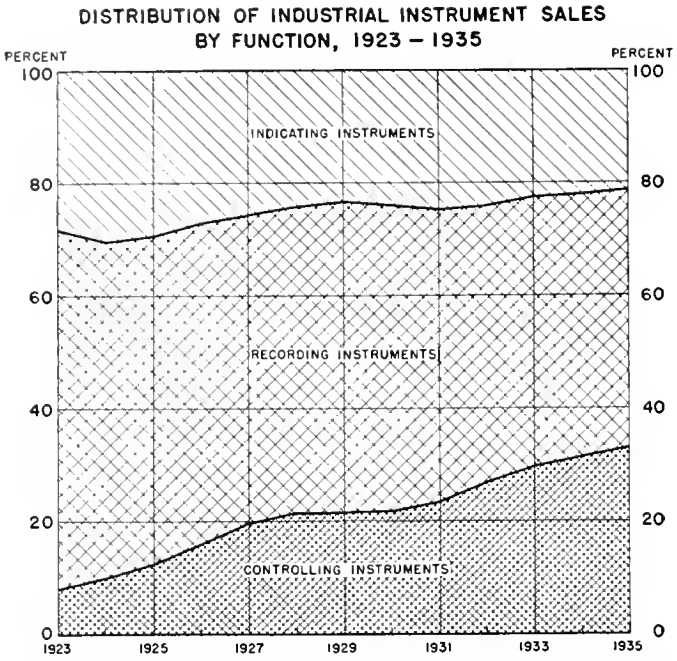
### Technology

Contributing to the greater emphasis on durable goods is the continuing development of improved technology. Partly this takes the form of new commodities, such as the automobile and the talking movie, which satisfy wants not previously satisfied or not satisfied so effectively. Partly the improving technology takes the form of techniques or machines which conserve resources, labor-saving devices such as the continuous strip rolling mills, fuel-saving devices such as the improved steam generating power plants, or raw material saving as in the case of the new high-strength steels. Constant improvements in technique make for changes in the structure of production.

The two most important effects of technical change on the structure of production have been the increasing mechanization of production, largely through the introduction of automatic machines, and the improved organization of production in specific areas. In the home, the office, the farm, and the factory, automatic machines are performing services which contribute to a higher standard of living, increase production or release manpower and make it available for some other use. The increased use of automatic machines in industry is graphically indicated in chart XV which shows the proportion of total sales of instruments to industry which are used to control production processes. Such instruments make up nearly one-third of all instrument sales in 1935 whereas in 1920 they constituted less than one-twelfth of such sales.

Coupled with increasing mechanization has been the development of scientific management and improved techniques of organization. In the absence of any change in mechanical instruments, division of labor and synchronization of activity may lead to greatly increased productivity. In some of the most highly mechanized industries it is organization quite as much as mechanization upon which productivity rests. The automobile assembly line is relatively simple mechanically. Organizationally, it must function without a hitch. The large-scale, highly integrated organization of the railway system contributes its major technology. The telephone system is in essence a highly complex, smoothly functioning organization of individuals and materials.

CHART XV




Source: Works Progress Administration, national research project, *Industrial Instruments and Changing Technology*, figure 10, page 40.

Techniques of organization have extended their scope strikingly in recent years. Scientific management has grown from preoccupation with the minute detail of industrial processes—the efficiency of the individual worker's movements—to concern with problems of broader scope—the whole organization of an enterprise, the clarification of duties among departments and branches of the organization and the disentanglement of functions involved in techniques of administration. This development has made possible a greater product per worker often quite as significantly as has increased mechanization.

The saving of manpower in different lines of activity resulting from mechanization and improved management is indicated in chart XVI which shows the decline in the manpower required per unit of production in five major segments of production in the post-war period. The decline in manpower requirement for the same amount of production has been greatest in manufacturing, amounting to approximately 45 percent from 1920 to 1932. Mining, steam railroads, and telephone requirements dropped roughly 20 to 25 percent.

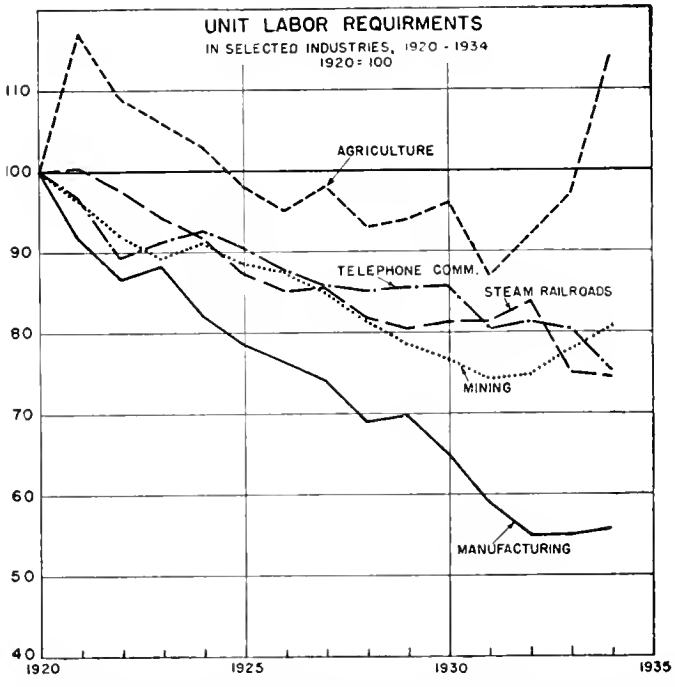
The decline in manpower requirements in agriculture appears to have been more uneven and less marked. Since the estimate of unit labor requirements is largely derived from a comparison of the volume of output with the number of persons employed, the effects of bad seasons in reducing crops and of depression in backing up surplus workers on the farms appear as increases in the amount of labor required per output. Studies of changing techniques in the production of specific crops show continuous declines in labor requirements rather than the uneven trend shown here.

With the exception of the utilities, the increase in output per worker appears to have been checked during the depression. The effect of technological improvements, however, is obscured by the fact that an apparent slowing down in the rate of increase in output per worker may reflect a decline in new invention, a reduced rate of new construction which would mean that new inventions were put into use less rapidly, or an increase in part-time employment.

If similar data were available for trade and consumer services, they would probably show only a very minor reduction in the manpower per unit of production in these fields.

This release in manpower per unit of output continued fairly steadily from 1920 onward but, whatever hardships it may have placed on individuals, it did not involve an absolute diminution in total employment prior to 1930 since the total manpower employed in 1928 and 1929 was 8 percent and 10 percent greater than in 1920. Nor is there convincing evidence that the great unemployment in the depression of the thirties was a direct result of technical improvement. The increasing mechanization and increased integration of production unquestionably altered somewhat the structure of the whole economy and through that influence may have made the whole economy more subject to depression.

CHART XVI




Source: Based on data from *Technological Trends and National Policy*, National Resources Committee, 1937, table 8, page 77, for all industries except agriculture. For the data on unit labor requirement in agriculture, see appendix 18, section 10.

### Potential Production

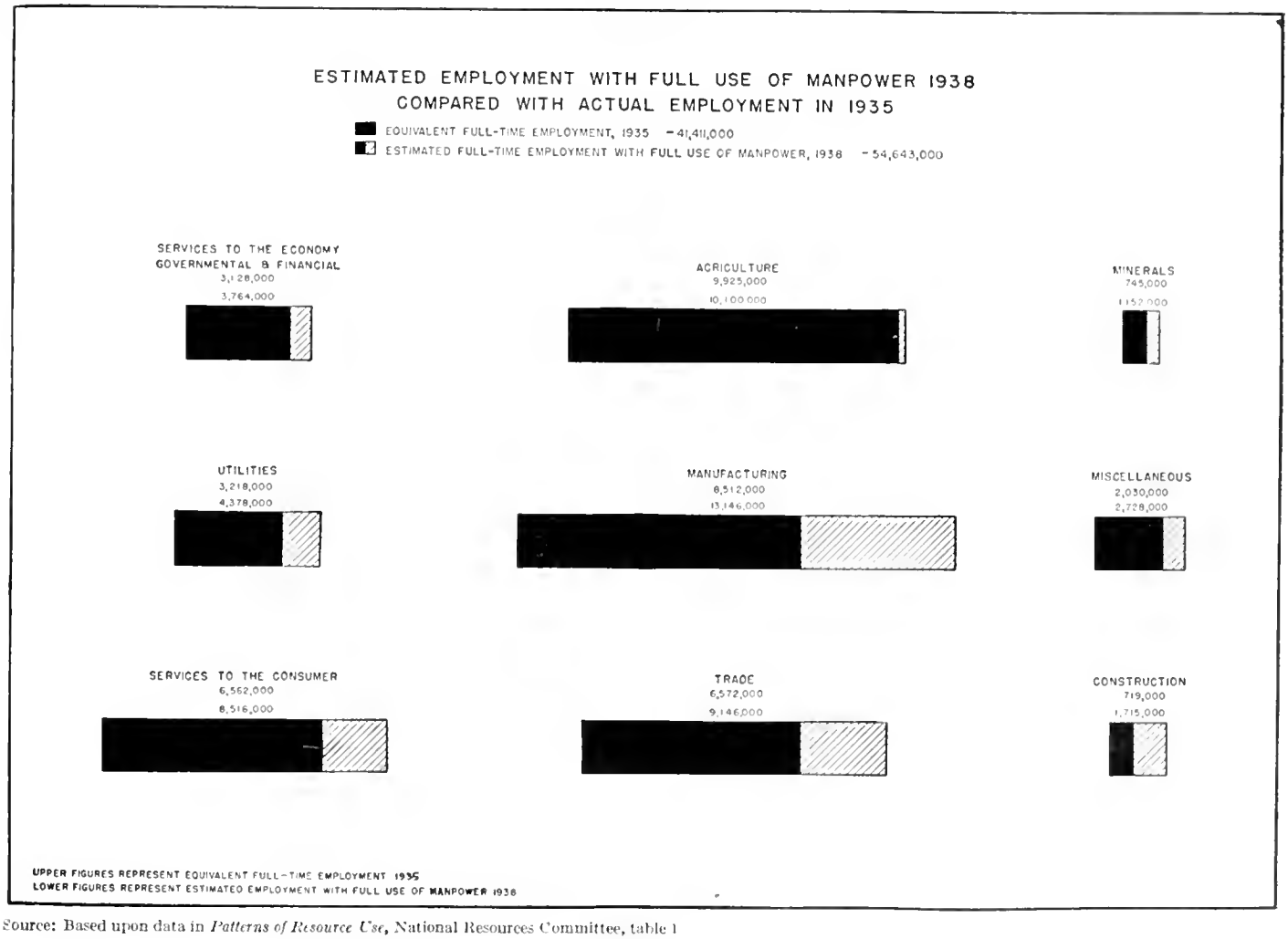
The combined effects of long-time trends, technological change affecting the manpower required for a given volume of production and sensitivity to depression may be seen in the following chart, XVII. Here the potentialities of 1938 are set forth in contrast to the actualities of 1935, for the major segments of the whole economy. The totals for each segment here shown represent the 1938 distribution of employment which it is estimated would correspond with the full use of manpower, taking into account trends in consumption habits and technological changes. The assumption of no unemployment is unrealistic in view of the fact that at no time since 1920 have there been fewer than one and one-half million unemployed. The figures for no unemployment are used because of the absence of a basis for estimating the minimum feasible unemployment. The black portion of each segment represents the actual employment in 1935, reduced to the equivalent of full-time employment. The size of the difference indicates the areas where the absolute increase in employment which would accompany the full use of resources is greatest. A comparison between the black and gray portions of each segment shows the percentage increase which would correspond with full employment under these conditions. The data for construction are very inadequate and the estimate of potential employment is less reliable for this than for other segments.

### International Trade

One more major element in the structure of production needs to be considered—international trade. So far only production within the United States has been considered. Actually part of the product of American industry is exported in exchange for commodities and services from abroad. The total volume of exports, including services to foreigners in this country, in 1935 amounted to 2,360 million dollars or approximately 5 percent of the country's total production.[5] The propor-

[5] This percentage is derived as follows: Total production including services in 1929 dollars for 1935 is 62,849 million dollars (as given by S. Kuznets in *Commodity Flow and Capital Formation*); total exports including services in 1935 amounted to 2,360 million dollars or 3,159 millions of 1929 dollars (derived from data of the Bureau of Foreign and Domestic Commerce. The ratio is 5 percent.

CHART XVII




Source: Based upon data in *Patterns of Resource Use*, National Resources Committee, table 1

tion of the products of three major segments which were exported in 1937 is indicated in table VII.

TABLE VII.—*Proportion of major exports to domestic production, 1937*

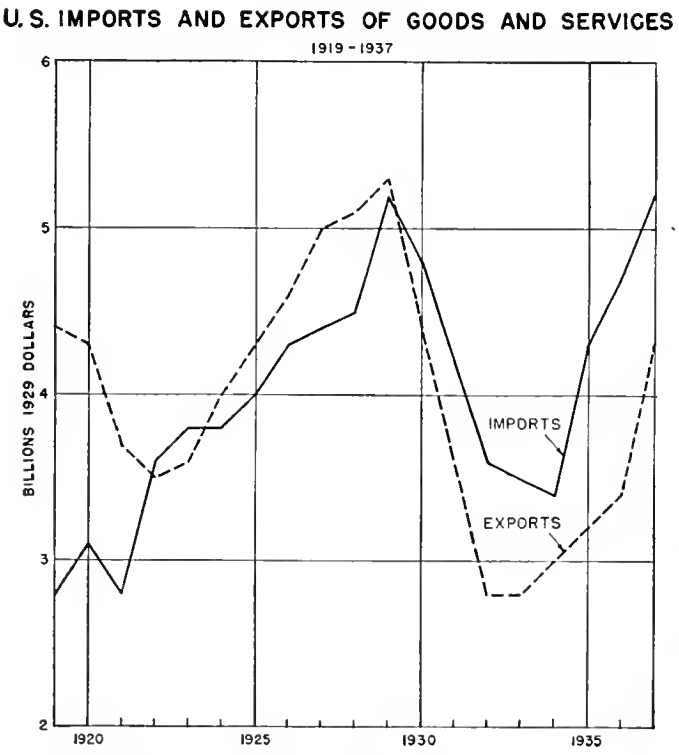
[Value in thousands of dollars]

| | Total production | Exports | Proportion exported |
|---|---|---|---|
| | | | *Percent* |
| Agricultural products | [1] 9,636,000 | [2] 795,034 | 8.2 |
| Mineral products (crude) | [3] 5,440,000 | [4] 177,609 | 3.3 |
| Manufactures | [5] 58,850,000 | [6] 2,471,303 | 4.2 |
| Total exports (including services) | | [7] 4,579,000 | |
| On the basis of an alternate method of computation, the results are as follows: | | | |
| Raw agricultural products | [1] 9,636,000 | [8] 757,179 | 7.8 |
| Mineral products (crude) | [3] 5,440,000 | [4] 177,609 | 3.3 |
| Value added, all manufactures | [9] 25,070,000 | [10] 1,107,895 | 4.4 |

[1] Bureau of Agricultural Economics, mimeographed release of May 21, 1938. Gross farm income.
[2] Bureau of Foreign and Domestic Commerce, total agricultural exports.
[3] Bureau of Mines, total value of all minerals produced.
[4] Bureau of Foreign and Domestic Commerce, total value of minerals included in exports of crude materials.
[5] Estimated by applying percentage change in a value index to the 1935 census figures.
[6] All manufactures and semimanufactures.
[7] Bureau of Foreign and Domestic Commerce, Finance Division.
[8] Value of crude agricultural exports plus value of exports of crude foodstuffs plus estimated value of raw materials contained in exports of manufactured foodstuffs and semi-manufactured and manufactured agricultural products.
[9] Estimated by applying ratio of value added to value of product (according to 1935 Census figures) to estimated value of product in 1937.
[10] Estimated by applying appropriate ratios to exports of all manufactures.

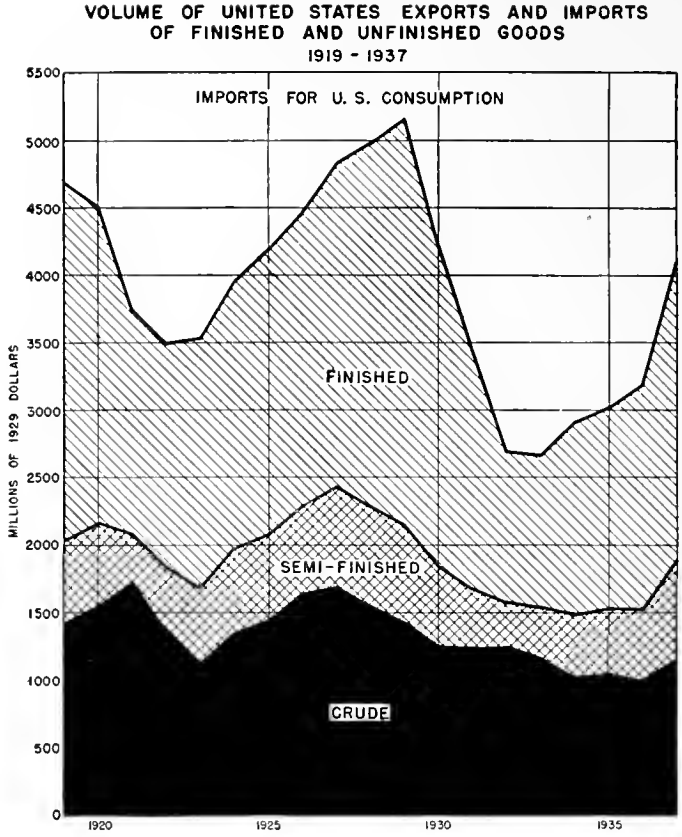
The total exports (both commodities and tourist expenditures) each year since 1919 are given in chart XVIII in terms of 1929 dollars. Table VII–A shows

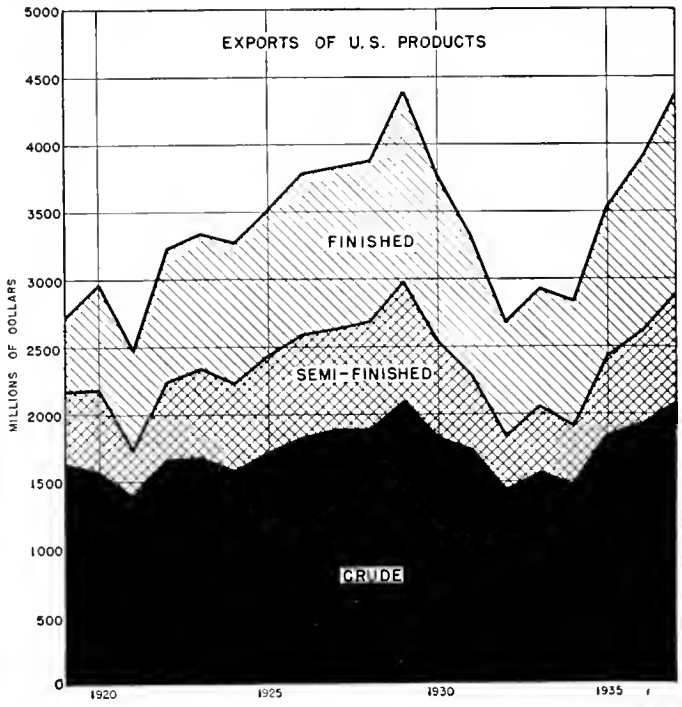
CHART XVIII




Source: Bureau of Foreign and Domestic Commerce.

CHART XIX




Source: Bureau of Foreign and Domestic Commerce. Chart shows values expressed in 1929 dollars.

the proportion of national production of commodities that has been exported in each census year, without any adjustment for price changes. Total exports show a declining trend both in absolute amounts and as compared with total production. The changing composition of exports is shown in chart XIX. A little more than half the value of total exports is made up of finished manufactures, while raw materials are next in importance. During the depression, more raw materials were exported and correspondingly less finished manufactures; and with recovery, exports of raw materials have fallen sharply in proportion to the total, while exports of finished manufactures, especially machinery and vehicles, have taken their place. Exports of semimanufactured goods have shown a steady, though slight, increasing trend in proportion to the total for the entire period of 1919 to 1937.

TABLE VII–A.—*Total production of goods and proportion exported, 1919–37*

[Millions of dollars]

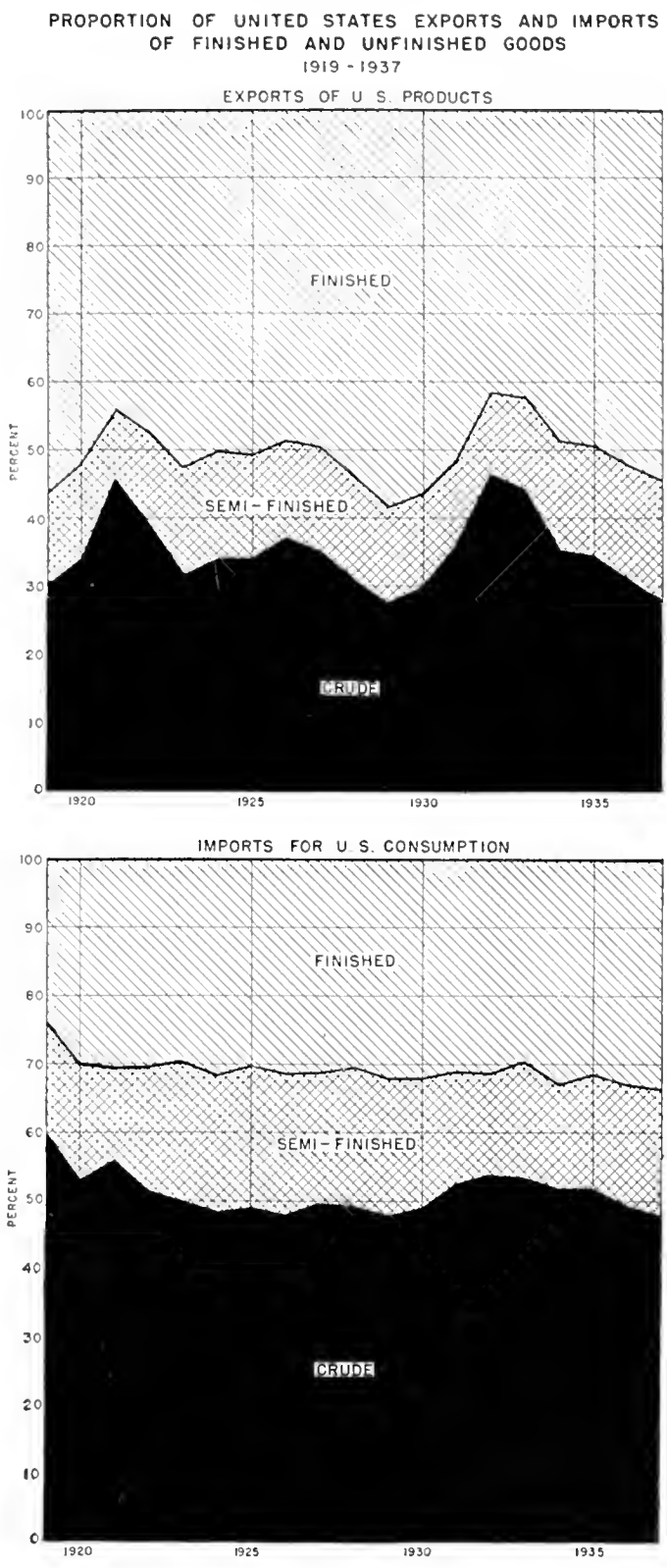
| Year | Total United States production | Exports of United States merchandise | Percent exports are of total production |
|---|---|---|---|
| 1919 | 48,527 | 7,750 | 16.0 |
| 1921 | 34,163 | 4,379 | 12.8 |
| 1923 | 45,903 | 4,091 | 8.9 |
| 1925 | 47,494 | 4,819 | 10.1 |
| 1927 | 47,930 | 4,759 | 9.9 |
| 1929 | 52,825 | 5,157 | 9.8 |
| 1931 | 32,337 | 2,378 | 7.4 |
| 1933 | 21,945 | 1,647 | 6.6 |
| 1935 | 32,937 | 2,243 | 6.8 |
| 1937 | (1) | 3,295 | (2) 7.5 |

Source: Bureau of Foreign and Domestic Commerce, *Summary of United States Trade With World*, 1937, p. 39.

[1] Not yet available.
[2] Based on a rough estimate of value of total production.

The primary function of these exports when considered in terms of the whole economy is as an exchange to obtain goods which cannot be produced in this country or which would cost more to produce in this country than other things which might be exported in exchange for them. As has already been indicated, approximately 40 percent of the country's imports (including imports from Hawaii and Puerto Rico, and expenditures of Americans abroad) in 1929 was made up of tropical products and minerals not available in the United States, while another 15 percent was made up of services rendered to Americans abroad as tourists or on business. The remaining 45 percent of imports was made up of things most of which could have been produced in this country but which can be obtained more cheaply by exchange. Thus the country exchanges American produced cotton for Japanese silk, wheat flour and cotton cloth for Cuban sugar, and raw cotton for French brandy and wines. Total imports are

CHART XX




Source: Bureau of Foreign and Domestic Commerce.

shown in chart XIX and XX, divided into the different major categories. The presence of tariffs both in this country and abroad tends to reduce this type of desirable exchange but has at the same time the advantage that it somewhat reduces the impact of foreign conditions on particular industries in this country.

In a general way, exports and imports rise and fall together; both have shown great sensitivity to depression, exports dropping in 1932 to 68 percent of their recent predepression trend and imports dropping to 86 percent of their corresponding trend. The composition of imports in terms of the degree of fabrication shows less marked trends of change than that of exports, the proportion of each major category to the whole being shown in chart XX.

While American imports and exports in recent years have tended to be of approximately the same magnitude and offsetting, there are financial transactions in addition as long- or short-term investments are made or retired between countries or as the profits from investment are realized. Such financial flows and their repercussions on production will be discussed in chapter VI.

The preceding pages represent an effort to indicate the main structural characteristics of production as reflected in the data for the period since the World War. These characteristics are altogether too complex to be summarized in a single paragraph. Yet certain outstanding items can be brought into review. In respect to proportionality the outstanding characteristics which call for note are (1) the greater amount of both manpower and capital employed in agriculture than in manufacturing, yet the very much smaller money value attached to the agricultural contribution to production than to the contribution of manufacturing, a difference which can be partly explained by the low level of agricultural prices; (2) the high proportion of capital invested per worker in the public utility field; and (3) the relatively large contribution to national production made by governmental and financial activities even when the post office and education are excluded. In respect to the changing character of production through time after adjustment for depression influence there are two most striking characteristics. First, there is the tendency for a decline of employment in the extractive segments, agriculture and mining, the lack of any significant post-war trend toward expanding employment in manufacturing and in utilities as a whole, the contraction of railroad employment counterbalancing expansion in other utility activities and the trend of expanding employment in trade, service to the consumer and in the field of government and finance. Second, there is the slight tendency for production to be shifted from nondurable to durable goods. Thus the economy as a whole is undergoing gradual changes in the relative emphasis likely to be placed on different types of productive functions when resources are fully employed.

In respect to depression behavior, the various economic functions show varying degrees of sensitivity to depression forces, the most stable being agriculture and governmental activity while the most sensitive are mining, manufacturing, especially of durable goods, and construction. The greater sensitivity of production in these latter segments is linked with a smaller depression sensitivity of prices. The implication of this will be considered in chapter VIII. Altogether the structure of national production, expanding over a period of years with the increase in the labor force and with improving techniques of production but frequently falling way below the full use of resources, shows a gradually changing proportioning of activity through the years and quite marked differences in the sensitivity of different types of activity to depression. The reasons for the failure of production to be maintained at a level which will fully employ the available resources will be discussed after the financial overlay to production has been considered.

# CHAPTER VI.—THE STRUCTURE OF PRODUCTION—FINANCIAL OVERLAY

In the two preceding chapters on the structure of production, attention has been entirely focused on the concrete physical activity of production, its location, and its characteristics. But the bulk of productive activity, apart from home production for home use, is carried on at least in part through the use of money, and the process of production is punctuated by money transactions.[1] It is the purpose of this chapter to indicate the way in which these transactions in combination involve a continuing flow of money overlying production, to show the magnitude of the major money flows and to discuss certain of the factors affecting them.

## Money Flows Overlying Production

At frequent and irregularly spaced intervals in the production process money changes hands with respect to some phase of that process. It is successively involved in the long drawn-out activity whereby cotton is raised, ginned, transported to the cotton mill, spun into yarn, woven into cloth, transported to the clothing manufacturer, made into overalls, distributed in bulk to wholesalers, broken into smaller lots and distributed to retailers, and finally distributed, one pair at a time, to the ultimate consumers. A series of money transactions prick out the pattern of production as the farmer pays for seed, rents land, hires cotton pickers, sells his cotton; as the ginning of cotton and its transport are paid for; as the goods change hands in the successive steps toward the consumer; as each producer hires workers, pays for materials and power, pays taxes for the services rendered by government, and pays interest and profits to the holders of financial interests in the enterprise.[2]

In this manner a long series of money transactions outline the physical process of production with considerable detail, yet all of the separate steps in production are not reflected in money transactions. Within a single enterprise production goes on without money changing hands at each stop. There is no separate money transaction as the cotton is put through each of the separate machines in the textile mill. Only as goods are transferred between economic units, or as factors of production are supplied by individuals or enterprises to other individuals or enterprises, does the productive process involve money transactions.

The more highly integrated an industrial process, the fewer the money transactions as the goods move toward the consumer. The Ford Motor Co. can mine ore and coal, make steel, and fabricate it into automobiles without money transactions intervening between these steps. But even in such a highly integrated process of production, money transactions outline the different stages as wages are paid for the different types of activity, taxes are paid on different properties, and materials have to be bought.

Even in the case of government where most services are rendered to business or ultimate consumers without any specific charge for the specific service the process of rendering services is pricked out in money terms as salaries are paid to school teachers, as the labor and material costs of road building are paid, as judges and police are paid, and as the multitude of other productive activities of government are financed.

Thus, for practically the whole of productive activity, except that carried on in the home, there is a pattern of financial flows overlying the physical flows of production. At intervals the financial flows are attached to the physical flows by money transactions. In the following discussion, the structure and magnitudes of these money flows will be sketched as far as possible. At many points, particularly with respect to saving, there are insufficient data available to show magnitudes; at some points there is so much confusion of understanding that even if data were available there would be disagreement as to how they should be interpreted. In spite of its inadequacies, this sketch of the financial overlay to the productive structure is given because of the fundamental importance of financial factors to the functioning of production. The character of the major money flows will be taken up first and then their magnitudes.

## The Major Money Flows

The major financial flows and the main production flows differ both in the direction and in the circularity of flow. Production moves by successive steps towards the consumer while the money flows directly connected with production move in the opposite direction. Production, with rare exceptions, is a straight line flow toward the consumer, ending with the latter. Money flow is in the main a circular flow, the same dollars

[1] Productive activity is also carried on within other consuming units for consumption within the units as is the case to some extent in children's or old people's homes and army camps.

[2] There is some question whether interest, dividend, and tax payments are properly included as involving transactions. They are clearly part of the circuit flow of money and will be included as transactions in this discussion.

being able to repeat the circuit time after time. It is partly because of the circular character of the flow of money that the financial flows are so poorly understood as compared with the more direct flows of production.

There are three basic elements in the circuit flow of money which are of primary importance to the structure of production. These are, first, the flow of money from producers to consumers in the form of consumer income; second, the reverse flow of money from consumers to producers as consumers purchase goods; and third, the flow of money from consumers to producers through the investment of savings. The money flowing to consumers as income is received as a return from work in the form of wages and salaries, as a return from investments in the form of interest, dividends, and rents, or as entrepreneurial withdrawals representing a return from work and investment in combination.

#### Characteristics of Money Flows

The money flowing from consumers to producers through the purchase of commodities and services is usually paid first to the final distributors and is then in part successively passed back to producers at earlier stages of production as each producer purchases commodities or business services from other producers. To some extent consumer savings are used in such a way as to finance consumption by others, in which case the money may pass through other hands before reaching the final distributor through the purchase of goods.

The money flowing from consumers to producers through the investment of savings may go direct to the producer who makes use of the savings or may reach him indirectly through a series of financial institutions which act as middlemen, bringing together funds from investors and distributing them to producers. Whatever the particular route by which money travels back and forth between producers and consumers in each of these flows, together they constitute the basic pattern of the circuit flow of money.

Although this basic set of money flows has been described as though money were first paid out to consumers as income and then money were received back by producers either through the sale of goods or the issuance of securities, there is in fact no necessary beginning or ending to the process. No study of the money actually in circulation can determine whether it originally entered the circuit through the hands of producers or the hands of consumers. It would be just as correct to describe the flow as one in which consumers purchased goods or invested in enterprises and then had their money supply replenished through the receipt of wages, salaries, interest, dividends and other sources. Both processes go on simultaneously and neither precedes the other as a necessary condition of production, however much particular injections of money into circulation can be said to be made initially through the hands of producers or of consumers.

In addition to the goods purchased, both consumers and producers obtain commodities and services, particularly the latter, from government without making any specific payment for the specific goods obtained. The production of these goods is financed in part out of taxes levied on both consumers and producers and in part out of governmental borrowings. In the circuit flow of money, the money collected as taxes performs much the same role as the money collected by producers through sales, in both cases providing the funds out of which current production can be financed. Likewise the money obtained through governmental borrowing roughly corresponds in the circuit flow of money with the money obtained by producers through the issuance of securities. When government is included as a producer, the three basic flows in the circuit flow of money thus consist of (1) the money flow to consumers in the form of money income, (2) the money flow from consumers to producers in payment for goods plus the taxes paid to government, and (3) the money flow to producers, including government, as savings are made available to them. Besides these basic flows there are secondary money flows such as those involved in the use of installment credit and in the disposal of corporate savings, which are important to the structure of production.

In addition to such money flows, there are various money transactions which have little significance for the structure of production. Thus the sale of securities by one investor to another has little direct significance for production since it does not supply new funds to finance new capital formation. So also the money flow accompanying a transfer of an existing property from one owner to another such as the sale of a farm or home may not be connected with a step in the process of production. Likewise, gifts between consumers only shift purchasing power without contributing to the process of production. All of these can be disregarded in considering the financial overlay to production.

On the whole and over any considerable period of time, the monies paid out to consumers as income are of the same general magnitude as the monies received by producers through the sale of goods, through taxes, or through the sale of securities or the obtaining of loans.[3] However, in any relatively short period it is probable that, even if the total money supply remained constant, serious discrepancies could arise either through the building up of cash holdings by producers at the expense of consumer holdings or of consumer holdings at the expense of producer holdings. Likewise, if there is a significant alteration in the supply of

[3] The monies paid out by producers in retiring outstanding securities are implicitly treated as involving negative sales in the above statement.

money, the monies paid out and received by producers may differ considerably.

There are many persons who believe that differences in the relative money flows are of major significance as a structural feature of the American economy, instituting or contributing to declining use of resources under some conditions and to expanding use of resources under other conditions. At the present time, there is too little data available to measure the magnitude of such discrepancies in the circuit flow of money with any degree of precision. Yet potentially they seem so important that intensive research in this field is called for. Is sufficient purchasing power being generated by business and government together to bring about the full employment of available resources, insofar as purchasing power alone can do this? Under what conditions is a deficiency likely to arise and how could it be remedied? The answers to these questions are important for understanding of the financial overlay to the structure of production. Yet in this report the most that can be done is to indicate the magnitude and character of financial flows without being able to indicate the magnitude of any discrepancies in relative flow which might have occurred.

Even this more meagre objective involves difficulties due to the incompleteness of the available data. It is particularly difficult to trace through the money flows involved in the process of capital formation. For this reason the statistical data will be limited to the flow of income into the hands of consumers, the disposal of this income, and the flow of money between producers.

#### Money Flows to Consumers as Income

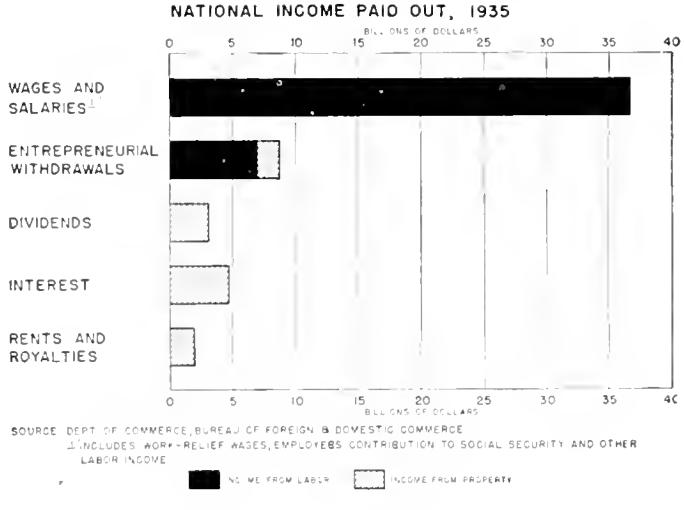
The total flow of money to consumers as income amounted to approximately 55 billion dollars during 1935. The form in which this income was received is indicated in chart I.[4] Approximately two-thirds was received as wages and salaries, a little under one-sixth as a return from property in the form of interest, dividends, rents, and royalties, and the remainder as entrepreneurial withdrawals derived from such activity as farming in which both labor and physical capital are supplied by the income receiver. A very rough allocation of this last amount between property and labor is suggested in the chart. On this basis nearly four-fifths of income receipts of consumers can be attributed to receipts from labor and approximately one-fifth to receipts from property. The industrial source of this income is indicated in chart II.[4]

The changes in the amount of money income paid to consumers are indicated in charts III and IV.[4] In these charts the data for the years 1919 to 1922 reflect the violent readjustments which were the aftermath of the war, particularly the violent price decline of 1920–21 and tell no clear story. The years from 1923 to 1929, a period of relative price stability and relatively full employment, are more significant in the story they tell of trends of change. In this period, consumer income shows a steady upward trend. The income of farmers and other entrepreneurs shows a gradual absolute increase but falls behind in the proportion of the total, dropping from 17.2 percent of the total in 1923 to 15.7 percent in 1929. The remaining consumer income was derived in almost constant proportions from labor and from property, 79.1 percent coming from wages and salaries in 1923 and 78.0 percent in 1929, an insignificant difference in the light of the possible error in the income estimates. In the depression period, 1929 to 1932, the total consumer income dropped precipitately, but the relative importance of income from property, labor, and from entrepreneurial activity as a source of consumer income remained virtually constant, though interest became a larger proportion of income from property as total consumer income declined while salaries in similar fashion became a larger proportion of income from labor. In the recovery period from 1933 to 1937 total consumer income recovered most of its depression drop, wages and salaries recovering slightly more than income from property. On the whole there appears to have been a remarkable degree of stability in the division of income between labor and property in spite of the violent changes in the total amount of consumer income.[5]

[4] For the data on which these charts are based see appendix 1B, section 11.

[5] This does not mean a high degree of stability in the proportion of national production going to labor and capital respectively since the dividends paid by corporations in any time period are not necessarily just equal to the profits made. In periods of high or increasing profits corporations as a group are likely to add to their surplus while in periods of low or declining earnings they are likely to pay out in dividends more than they are currently earning. Since this chapter is concerned with money flows rather than with the division of products it is the income paid out not that produced which is important.

CHART I




SOURCE: DEPT. OF COMMERCE, BUREAU OF FOREIGN & DOMESTIC COMMERCE

[1] INCLUDES WORK-RELIEF WAGES, EMPLOYERS CONTRIBUTION TO SOCIAL SECURITY AND OTHER LABOR INCOME

The relative distribution of income among different income groups has already been shown in chapter II, chart I, for 1935–36. Approximately 70 percent of consumer income went to persons or families with incomes under $3,000, over 80 percent to consumers with incomes under $5,000, and approximately 13 percent went to consumers with incomes over $10,000. No reliable information is available as to any shifts in income distribution which may have arisen in recent years but the relatively stable proportion of consumer income derived from labor and property respectively suggests that no violent changes in the proportionate distribution of income between different groups of consumers have taken place.[6]

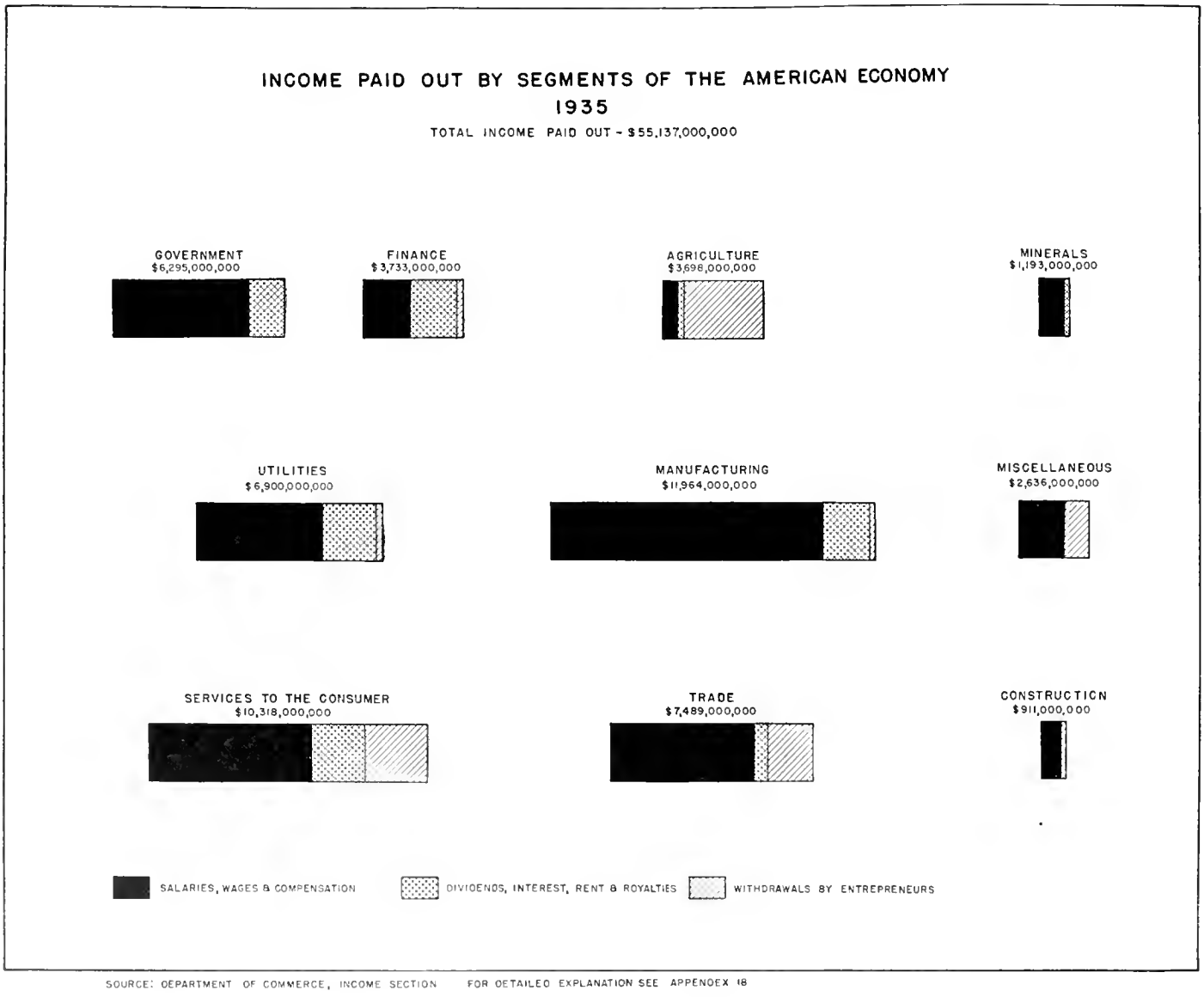
[6] It would be quite possible for a large shift in proportionate distribution of income of income to occur without any significant effect on the proportions of income derived respectively from labor, property, and entrepreneurial activity, but such a shift seems unlikely.

**Money Flows Involved in the Disposal of Consumer Income**

While the available data does not make it possible to trace through the two main flows from consumers to producers into current consumption and capital formation respectively, it is possible to throw some light on the initial step in those flows by examining the disposal of consumer income. Consumers can use their income to finance consumption, whether spending it themselves, paying direct taxes, or making gifts to institutions which spend it on social consumption; or they can save their income, either holding the savings in the form of money or investing them in securities or property.

In table I, estimated consumer income in 1935–36 is divided into the four categories, expenditure on con-

CHART II




SOURCE: DEPARTMENT OF COMMERCE, INCOME SECTION FOR DETAILED EXPLANATION SEE APPENDIX 18

sumption, personal tax payments, gifts, and savings.[7] The 50 billions of expenditures on consumption represent direct payments to producing enterprises for commodities and services plus taxes paid in connection with such goods[8] while the 889 millions paid by consumers in personal taxes constitute one of the bases for financing the services rendered by government. Much of the 2,178 million dollars disposed of as gifts went to finance the services rendered by such institutions as churches, hospitals, and schools. The figure of six billions of income estimated to have been saved by consumers is a very much less accurate figure than that for consumer expenditure but does reflect roughly the magnitude of consumer savings. This sum may in part have been held by them in the form of money, thus constituting an addition to their money holdings; in part it may have been invested in such a way as to finance expenditure on consumption by other consumers as in the case of savings used to provide the loanable funds of installment finance companies; presumably only a part was invested as a step in the process of capital formation and used to finance the construction of new plant or additions to producers' inventories. Data are not available to estimate this latter amount. However, it may be said that of the money flows from consumers to producers in the disposal of consumer income approximately five-sixths represented direct payment for commodities and services, and roughly one-tenth represented savings invested in plant and producers' inventory or loaned to government or disposed of in some other fashion.

[7] In this calculation taxes paid by consumers on owned homes are treated as part of expenditure on housing and all owned homes are treated as independent investments.

[8] Such as sales taxes, automobile taxes, and real estate taxes.

CHART III

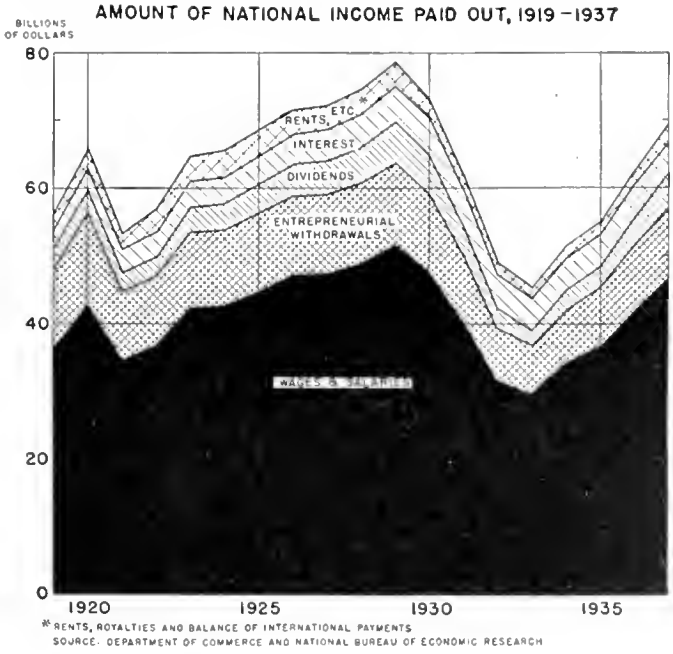



CHART IV

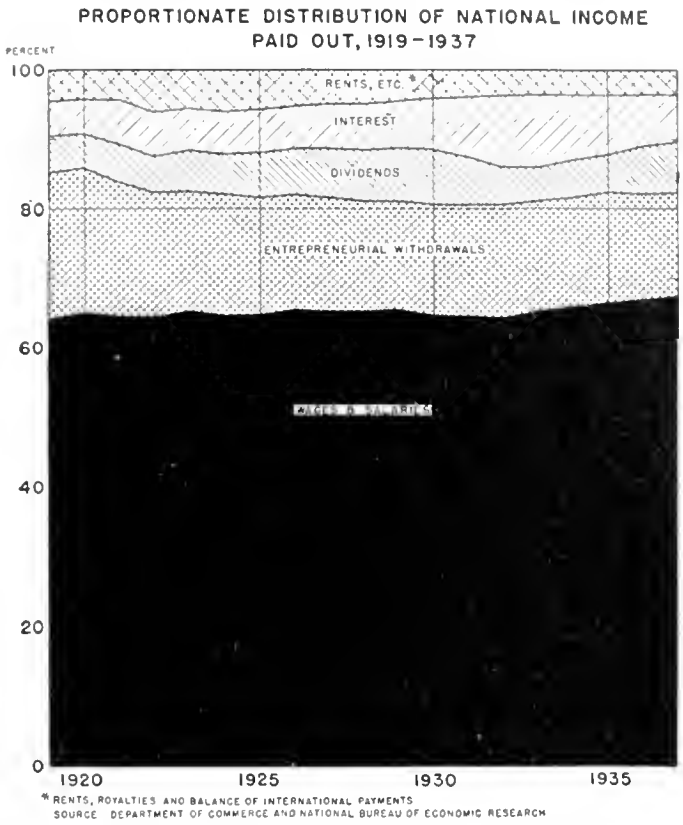



TABLE I.—*Disposal of consumer income 1935–36*

| | *Million dollars* |
|---|---|
| Expenditure on consumption [1] | 50, 214 |
| Personal taxes [2] | 889 |
| Gifts | 2, 178 |
| Net consumer savings | 5, 978 |
| Total consumer income | 59, 259 |

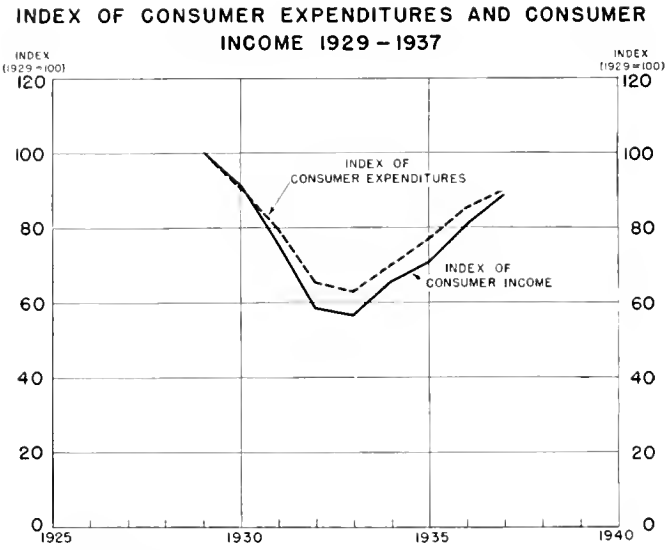
Source: *Consumer Expenditures in the United States*, National Resources Committee, 1939.

[1] Includes taxes paid in connection with goods consumed, such as sales taxes, automobile license fees, and real estate taxes on owned homes. Also includes the value of home produced food and imputed interest on the value of owned homes.

[2] Includes income taxes, poll taxes, and certain personal property taxes.

No data are available to show the absolute changes through time in the disposal of consumer income taxes, savings, and consumption. However, it is possible to indicate very roughly the magnitude of the changes in the volume of consumer expenditure in very recent years. Changes in consumer expenditure are indicated by an index of total consumer expenditures from 1929 to 1937 in chart V along with an index of consumer income. It is clear that the two fluctuated together during the depression, though expenditure appears to have dropped less and recovered less than

CHART V




Source: See appendix 18, section 21.

consumer income. The fact that the index for consumer expenditure runs above that for consumer income does not mean negative savings but only a decline in savings relative to the base year, 1929.

### Money Flows Between Producers

Further light can be thrown on the money flows away from consumers by examining the money flows between producers in the successive stages of production. No figures are available presenting these money flows broken down into those flows concerned with current consumption and those concerned with capital formation but the combined money flows between different industries have been worked out for the year 1929 in an unpublished report by Dr. Wassily W. Leontief and are included as Appendix 17 in this report.[9] The results of his analysis are summarized in slightly modified form in table II.[10] The precise figures given do not exactly coincide with other figures contained in this report but the differences are minor insofar as the relative magnitudes of the money flows are concerned.

The figures in table II cover the money flows in 1929 between each of the main segments of the economy except government and finance. Figures are also given for the flows between producers and consumers and the flows between this country and foreign countries in payment for commodities. The rows across the table give the money received by the enterprises in any particular segment from enterprises or individuals in the same segment and from each of the other major segments. Thus, in agriculture, farmers received over 5 billion dollars from other farmers for corn, hay, seed, cattle, and similar items used in further farm production, about the same amount from manufacturing enterprises for wheat, cotton, cattle, and other raw materials for processing or fabrication, about 3 billion for agricul-

[9] Permission to use this material in advance of publication has been generously granted by Dr. Leontief and by the Harvard University Committee on research in the social sciences which is financing Dr. Leontief's study.

[10] The figures in the summary differ from those in Dr. Leontief's table in three respects besides that of summarization. First, the segments, government and finance have been added, though only data on income received by consumers is included under these headings. These amounts have been deducted from Dr. Leontief's item 43c x 44—*Total Services x Undistributed* to make the totals correspond. Second, the consumer service segment has been added and Dr. Leontief's item 43c x 43—*Total Services x Consumption* is treated as measuring both consumer income derived from consumer service enterprises and consumer expenditure on consumer services. This involves some error in that the consumer service activities do involve some payments for materials, taxes, etc., but these are probably not great in comparison with the total item. Finally, the items classified by Dr. Leontief as consumption have been divided up between a new segment, trade, and the category consumer expenditure to which have been added all payments estimated to have been made by retail trade to wholesale trade. The procedure followed is indicated in appendix 18, section 13.

TABLE II.—*Major money flows in the American economy, 1929* [1] *(exclusive of investment flows)*

[Millions of dollars]

| The economic units listed at the right paid the amounts of money indicated in the table to the economic units listed below | Money paid by— | | | | | | | | | Money received from exports | Money payments not allocated to payer | Consumer expenditures | Gross total | Net total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Government units | Financial enterprises | Agricultural enterprises | Mining | Utilities | Manufacturing | Consumer service enterprises | Trading enterprises | Construction | | | | | |
| Money received by— | | | | | | | | | | | | | | |
| Government units | ? | ? | | | | | | | | | | | | |
| Financial enterprises | ? | ? | | | | | | | | | | | | |
| Agricultural enterprises | ? | ? | 5,346 | | | 5,408 | | 2,953 | | 1,194 | 259 | 328 | 15,488 | 10,142 |
| Mining | ? | ? | 10 | 357 | 525 | 3,403 | | 1,018 | 1,180 | 215 | 759 | | 7,467 | 7,110 |
| Utilities | ? | ? | 741 | 1,521 | 213 | 2,201 | | | | 73 | 3,249 | 3,146 | 11,144 | 10,931 |
| Manufacturing | ? | ? | 1,931 | 646 | 2,687 | 18,467 | | 24,917 | 2,111 | 3,675 | 13,895 | 2,230 | 70,649 | 52,182 |
| Consumer service enterprises | ? | ? | | | | | | | | | | 14,153 | 14,153 | 14,153 |
| Trading enterprises | ? | ? | | | | | | 21,561 | | 1,385 | | 47,196 | 70,142 | 48,581 |
| Construction | ? | ? | | 36 | 291 | 513 | | | | | 3,508 | 2,623 | 6,971 | 6,971 |
| Money paid for imports | ? | ? | 50 | 24 | 5 | 3,647 | | 842 | 27 | | 402 | | 4,997 | 4,997 |
| Money receipts not allocated to recipients | ? | ? | 489 | 2,205 | 2,136 | 19,765 | | 6,552 | 822 | 73 | | 5,880 | 37,922 | 37,922 |
| Income received by consumers | 6,470 | 8,828 | 6,654 | 2,873 | 6,782 | 20,406 | 14,153 | 10,914 | 3,079 | | 5,791 | | 85,950 | 85,950 |
| Gross total | 6,470 | 8,828 | 15,221 | 7,662 | 12,639 | 73,810 | 14,153 | 68,757 | 7,219 | 6,615 | 27,863 | 75,646 | 324,883 | |
| Net total | 6,470 | 8,828 | 9,875 | 7,305 | 12,426 | 55,343 | 14,153 | 47,196 | 7,219 | 6,615 | 27,863 | 75,646 | | 278,939 |

[1] Summarized in a slightly modified form from an analysis given in an unpublished report by Dr. Wassily W. Leontief. For details, see appendix 17, and appendix 18, section 13.

tural products sold to wholesalers or retailers for retail distribution, over a billion from direct exports and approximately a third of a billion from the sale of products direct to consumers, leaving approximately a quarter of a billion of farm receipts in 1929 not accounted for. The gross total of farm receipts from all sources appears to have been over 15 billion, while the net total of receipts by agriculture from sources other than agriculture amounted to approximately 10 billion.

By reading down the first column in the table it is possible to see roughly the disposal of agricultural funds. The 5 billion already referred to was paid by farmers to other farmers, an insignificant amount was paid to mining enterprises presumably mostly for coal, three-quarters of a billion was paid to utilities mostly to the railroads for the transport of farm products, nearly two billion was paid to manufacturers for agricultural machinery, fertilizer, fuel, processed feed, and other things necessary to farm operation. Over $6\frac{1}{2}$ billion was paid out by farmers to consumers in the form of wages, rents, and interest or represented the income of farmers derived from their farm operations. Less than half a billion of farm expenditure remains unaccounted for, a part of which must have been taxes paid to government. The gross total of such items amounted to over 15 billion while the net total of payments made by farmers to other parts of the economy or received as income by farmers amounted to nearly 10 billion. The money payments and receipts of each segment of the economy except government and finance can similarly be read from the table.

This table should not be treated as anything more than a very crude first approximation to the volume of the money flows overlying production.[11] For most segments it shows the relative magnitudes of the money flows, not their precise amounts. It is weak as a representation of all the money flows in 1929 in three major respects. First, it gives only a single item in the case of government and in that of finance. Second, for trade it gives only the minimum money transactions which are estimated to have been involved as commodities were purchased by wholesale trading enterprises, sold to retailers, and in turn sold to consumers or as commodities were purchased directly from producers by retail enterprises and sold to consumers. It does not cover secondary wholesale transactions such as arise when there is more than one middleman between producer and retailer and it does not include in any way such trading transactions as arise when producers purchase commodities from wholesale or retail trading enterprises, the sales by one producer to another through middlemen being treated as though they were direct sales. Finally the table is primarily concerned with the money flows overlying physical production and does not cover the money flows involved in the process of saving and investment. As more complete statistical data become available it would be desirable to complete and make more precise this representation of the money flows involved in production.

The more important of the money flows shown in the table are made graphic in chart VI. For each segment, the money flows between consumers and producers are indicated in gray while the flows between pairs of producers are indicated in black. At the left of each segment the money flowing to consumers as income is represented at the top and money flowing to producers in the form of consumer expenditure is indicated at the bottom. At the right of each segment the money flowing from one producer to another producer in the same segment is indicated. In addition the most important money flows between producers in different segments are indicated. If the remaining money flows were also shown the chart would become too complex to follow. For that reason only their magnitude is indicated under the caption "other." As can be seen from a glance at the chart, the main trunk of money flows runs from consumers to trade, then to manufacturing and in turn to agriculture and to mining, but becomes smaller at each stage as it is reduced by the payments made to consumers as income from labor or capital and those made to the segments supplying services to the whole economy, the utilities, financial institutions, and governmental units. It is this money flow as money moves from consumers into the channels of trade and back to consumers again or from producers to consumers and back to producers through the channels of trade that keeps production going in the American economy.

### Factors Associated With Money Flows

The flow of money through these channels is associated with a variety of factors of which the four most important are changes in the total supply of money, the building up or depleting of money balances held by particular economic groups, shifts in the relative flow of funds into current consumption and capital formation, and, finally, changes in price relationships. The last of these will be discussed in chapter VIII. In this chapter a beginning will be made toward delineating the characteristics, magnitude, and changes in (1) the total money supply, (2) the money balances held by different economic groups, and (3) the proportioning of money flows between current consumption and capital forma-

[11] In developing the data underlying this table Dr. Leontief was concerned primarily with the *money value of goods and services* produced by private or corporate enterprise and the money payments made in that connection. He made no attempt to cover *all financial flows*. The incompleteness of the table given above as a representation of all money flows results from the quite different purpose involved in the compilation of the data on which it is largely based. This incompleteness in no way reflects on Dr. Leontief's work.

tion. The lack of adequate data will make the statistical presentation somewhat fragmentary as was the case with the basic money flows. The limited statistical material is included here partly because some sketching in of these factors is essential to an understanding of the structure of the American economy and partly in the hope that subsequent research and data collection can fill out the more significant gaps.

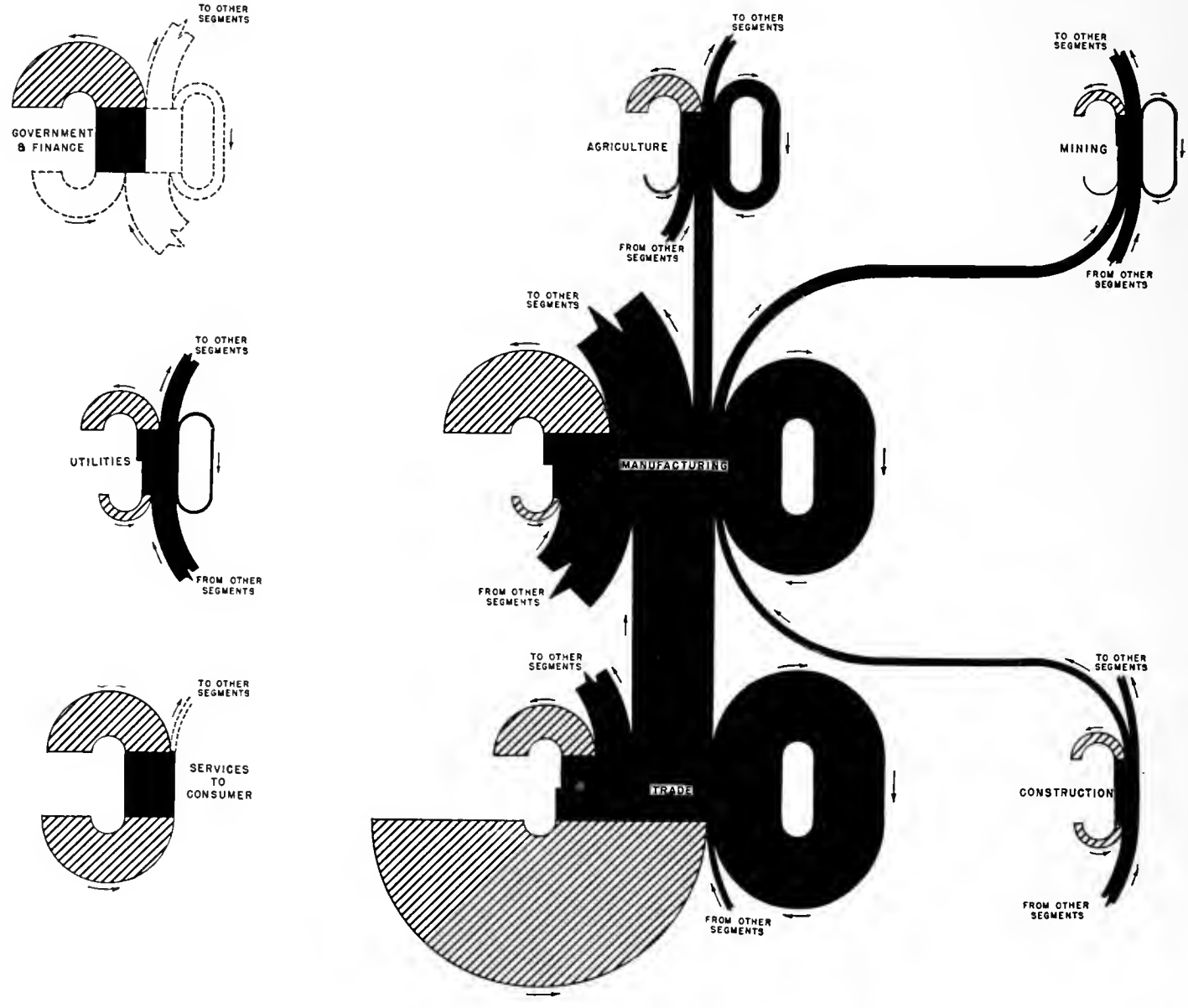
**The Money Suppply**

On June 30, 1935, the total supply of money outstanding in the United States amounted to approxi-

CHART VI

## MAJOR MONEY FLOWS IN THE AMERICAN ECONOMY 1929

EXCLUSIVE OF FINANCIAL FLOWS




Source: Based on table II of this chapter.

mately 26.5 billion dollars.[12] This was composed of approximately 4.8 billions of dollars in currency (bills and coins outside of banks) capable of being used as a means of payment in hand-to-hand circulation and 21.8 billions of dollars of demand deposits carried as book entries in banking records and capable of being transferred in these records from the name of one depositor to that of another through checks.[13] By far the larger proportion of the money supply is thus composed of demand deposits, currency contributing only 18 percent of the total.[14]

The variations in the money supply from 1921 to 1937 are indicated in chart VII. The money supply expanded fairly steadily from 1921 to 1929, then contracted sharply to the bank holiday in 1933, and expanded again so that by the end of June 1937 it amounted to over 32 billion dollars. The bulk of this variation took the form of changes in the outstanding deposits. Between the middle of 1929 and 1933, demand deposits dropped over 8 billion dollars, or more than one-third, while most of the increase in money supply after 1933 was in the form of demand deposits.

The wide variations in the total money supply are of considerable importance to the structure of the American economy though there is no general agreement as to the exact role that these variations have played in connection with the variations in the level of production and of prices. Since this report is concerned primarily with the structural characteristics of the American economy rather than its operating characteristics, the exact effect of changes in the money supply on changes in the level of economic activity does not need to be discussed. What is significant for the economic structure is first, that such wide variations in the volume of money outstanding can and do take place within relatively short periods of time,[15] and second, that these changes in money supply necessarily alter the buying power of individuals or institutions.

The great bulk of the money supply in the United States is provided through three channels, bank credit, gold inflow, and government issue. Of these, bank credit is by far the most important while the volume of money outstanding as a result of direct government issue is relatively small consisting mostly of silver certificates, subsidiary coins, and a relatively small volume of United States notes.[16] Likewise the major variations in money supply derive from changes in bank credit. When the banking system expands its loans and investments and thereby increases the money supply, it is providing individuals, enterprises, or government units with buying power without at the same time reducing the buying power of anyone else.[17] Likewise, when bank credit is contracted, the buying power of some economic units is reduced without any

[12] The term "money" has been given many different meanings in economic literature, some more comprehensive than others. In terms of the structure of the whole economy, the significant meaning is whatever is *customarily* given in exchange for goods, securities, or in payment for labor. In this country most goods, securities, or labor transactions involve payment in currency or the transfer of demand deposits from the name of one person or institution to that of another. Some transactions involve barter of goods for goods, as when the farmer swaps butter and eggs for farm supplies at the village grocery. Some transactions involve payment in securities, as when a corporation exchanges its own securities for those of another over which it seeks some measure of control or when Liberty Bonds were used to pay for a new automobile or parlor furniture. But the bulk of transactions involve currency or demand deposits as one of the things exchanged in the transaction and the term "money" in this report will be limited to these two media of payment.

Time deposits are excluded from the category "money" chiefly because they are seldom used as a basis for payment in transactions, usually having to be converted into demand deposits or currency before they can be spent, just as a short-term government note usually has to be converted before it can be the basis for expenditures. Time deposits, call loans, and short-term paper have certain of the characteristics of money but not other characteristics. All represent highly liquid assets, but only currency and demand deposits are *customarily* used to pay for goods, labor, or securities

[13] Checks are often thought of as money, but in practice, except when funds are being withdrawn in currency, a check is essentially a letter to a bank asking the bank to transfer the book entry in the name of one depositor to the name of another depositor, or to a different account of the same depositor, in the same or another bank. It is the bank obligation represented by the book entry and referred to as a deposit which constitutes a part of the money supply, not the check by means of which title to the deposit is transferred.

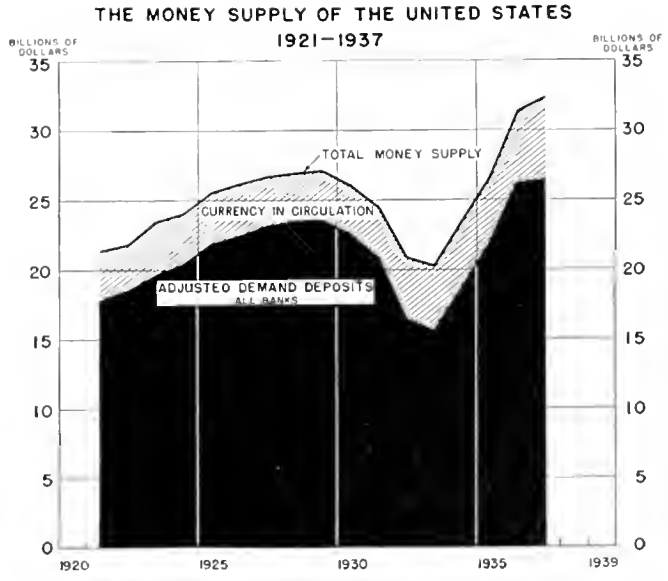
[14] Gold ceased to be part of the currency supply in March 1933 when gold was retired from circulation. From that time on no part of the internal money supply of the United States has consisted of gold.

[15] This is a characteristic which sharply distinguishes the American from the English economy, in which no serious contraction in the money supply occurred in the depression.

[16] Both Federal Reserve notes and national bank notes come into circulation primarily as a result of the extension of bank credit or the flow of gold into the banking system.

[17] This is true whether the money supply is expanded by making loans or by purchasing securities. In the latter case, if the securities are newly issued and purchased by the bank directly from the issuer the effect on buying power is the same as if the bank had made a loan to the issuer, though the legal effect is different. If the securities purchased have been previously issued, the bank purchase provides the seller with money which the latter can spend on consumption or investment, or hold as addition to his money balance.

CHART VII




Source: See appendix 18, section 14.

corresponding increase in the buying power of other units. The effect of such changes in buying power presumably depends on the particular conditions under which they occur. The magnitude of their possible effect is suggested by the fact that between 1929 and 1933, the money supply was reduced by practically 7 billions of dollars through the contraction of bank loans and investments while between 1933 and 1937 it was expanded by 12 billion dollars primarily through the expansion of bank credit. Such extensive withdrawals or injections of buying power cannot fail to have an effect on the flow of money and on economic activity.

### Money Balances Held by Different Economic Groups

Whatever the magnitude of the money supply at any given time, all the money outstanding must be in the possession of individuals, enterprises, governments or other economic units in the form of money balances.[18] These balances are important to the structure of the American economy because they reflect the power of the holders to put money into circulation by reducing their money balances and to withdraw money from current circulation by expanding their money balances. This power to start and stop the flow of money by varying money balances can have much the same effect on money flows and on production as have changes in the total money supply.

From the point of view of money flows, the most significant money balances are those held (1) by government, especially the Federal Government, (2) by producing enterprises, (3) by financial institutions other than banks, and (4) by individuals.

Actual data on the money balances of different economic groups are surprisingly scarce, considering their importance to the economy. The Federal Government regularly publishes its holdings of currency and demand deposits but for other groups only the very crudest data are available on the total money balances. Estimates are, however, available for 1933 and 1935 covering that part of money balances that is held in the form of demand deposits. Since demand deposits constituted over 75 percent of the total money supply in both these years, the figures on deposit holdings give a rough indication of the distribution of total money holdings even though currency was presumably not distributed in exactly the same proportions as demand deposits.

[18] The terms "possession" and "held by" are used in this chapter to refer to al forms of money even though bank deposits cannot be in the possession of their owner or held by them in the physical sense that coins or notes can be in their owners' possession or holding.

It should also be noted that the money outstanding performs two quite different functions. It not only enters into transactions, passing from hand to hand in exchange for goods, labor, or securities, but between transactions it acts as a store of value in the form of a money balance which represents to its possessor a liquid asset which can be exchanged at a moments notice for other things

The balances estimated to have been held by each of the different economic groups on December 31, 1933 and 1935, are given in table III. Of the total demand deposits of 21.9 billion outstanding in December 1935 approximately 7.6 billion were held by business enterprises, 5.0 billion by financial institutions and enterprises, 4.1 billion by public bodies and less than 5.2 billion by individuals. Of the amount held by individuals, over 430 million was held in deposit accounts of over $100,000 presumably for the most part the holdings of persons with larger incomes, while a very considerable sum must have been held by persons with intermediate incomes. Only a relatively small part could have been held by the individuals or families with smaller incomes who constitute the main source of consumer expenditure. Probably less than 14 percent [19] and possibly less than 10 percent of the total of demand deposits was held by consumers with incomes under $5,000 who provided over 88 percent of consumer expenditure in 1935–36. In contrast, business enterprises, financial institutions and investors between them held the great bulk of deposit money. Just how currency was divided between these groups can only be surmised. It is probable that a very much larger proportion of currency outside of banks was held by consumers than the proportion of demand deposits held by them. But even if half of the currency were held by individuals or families with incomes under $5,000, their total money holdings, deposits, and currency combined would amount at the very most to a fifth of the total money supply outstanding.

TABLE III.—*Estimated distribution of demand deposits 1933 and 1935*

[Amounts in millions of dollars]

| | Deposit balances | | Percent to total | | Absolute increase | Percentage increase |
|---|---|---|---|---|---|---|
| | Dec. 31, 1933 | Dec. 31, 1935 | Dec. 31, 1933 | Dec. 31, 1935 | | |
| Business | 6,120 | 7,640 | 40.6 | 34.9 | 1,520 | 24.8 |
| Finance | 2,390 | 4,960 | 15.8 | 22.7 | 2,570 | 107.5 |
| Government and other public bodies | 2,690 | 4,130 | 17.9 | 18.9 | 1,440 | 53.5 |
| Consumers and unclassified [1] | 3,870 | 5,130 | 25.7 | 23.5 | 1,260 | 32.6 |
| Total demand deposits [2] | 15,070 | 21,860 | 100.0 | 100.0 | 6,790 | 45.1 |

Source: Lauchlin Currie "The Economic Distribution of Demand Deposits" *Journal of American Statistical Association*, June 1938; p. 321.

[1] Includes individuals private accounts regardless of the size of the account but excludes business accounts of individuals.
[2] Adjusted for transit items.

These figures are significant for the structure of the American economy, because they indicate that the bulk of the money outstanding in 1935 was held by business enterprises or by financial institutions and individuals primarily concerned with the investment of

[19] For basis of estimate see appendix 18, section 15.

funds and likely to use their money balances only to a minor extent to purchase goods for consumption. Only a relatively small proportion of the total money supply was held by the individuals who provide the bulk of consumer expenditures. Nearly a fifth was held by public bodies capable of directing funds either into current consumption or capital formation. It is thus apparent that the bulk of consumers live on a more or less hand-to-mouth basis so far as their money holdings are concerned. As a group their money holdings could not have been sufficient to finance much more than a month of consumer expenditure at the 1935–36 rate. A very great percentage change in the money holdings of this group could occur without a very large contribution to current buying power. This is important for the functioning of the American economy because it means that great increases in expenditure on the bulk of consumers could not arise directly out of the use of money balances already held by consumers. They could arise only if consumers received increased incomes or if they either borrowed or trenched on previous investments. On the other hand, the small increases in consumer expenditure such as might arise if consumers depleted their money balances might have very important stimulating effects on economic activity much greater than their absolute magnitude, just as a relatively small increase in money holdings involved in what has sometimes been called a buyers' strike could have a cumulative depressing influence.

The very large changes which can occur in the relative money balances held by different economic groups is suggested by the comparison of the demand deposits of different groups in 1933 and 1935 already given in table III. While the total demand deposits increased nearly 7 billion or 45 percent between these two dates, money holdings of financial companies more than doubled, while the holdings of individuals increased only one-third. Of the total increase in money holdings nearly two-fifths was absorbed into the balances of financial institutions, less than one-fifth into those of consumers, and a fifth each by business and government. The magnitude of these shifts emphasizes the need for more extensive and exact information on money balances. The significance of the shifts will be discussed in the next section in connection with the proportioning of money flow between current consumption and capital formation.

## The Proportioning of Money Flows Between Savings and Consumption

The expansion or contraction of the money supply and the building up or depleting of money balances are not the only characteristics of the system of money flows which are of significance to the economic structure. The direction of money flows as between current consumption and capital formation is a factor of major significance. As money flows through economic channels, there are certain points at which it is directed in such a way as either to finance current consumption or to finance new plants, equipment, and additions to inventory. Sometimes the determination is simple and direct, as where a consumer spends his income on consumption goods or invests a part of it in the construction of a new house or when a corporation invests undistributed income directly in the construction of a new plant. Sometimes the determination of the money flow is a complex matter involving a combination of decisions at many points, as when a consumer saves part of his income and hands it over for investment to some financial institution which, in turn, passes the money savings on to some business enterprise that uses the funds either to expand its plant or to extend credit to consumers. Or the funds may be loaned to some government unit and the latter may determine whether they will be used for public works, for social expenditure on consumption, or in some other manner. However complex the process by which funds are directed into one or the other use, the direction is of significance to the structure of production because it conditions the volume of productive activity going respectively into the supply of goods currently consumed and into new plant, equipment, and inventory.

No attempt can here be made to disentangle all the different channels through which money flows in the process of financing production nor can all the different points be indicated at which discretion can be exercised to direct the flow into the financing of one or the other of the two basic types of productive activity. The most that can be done in this report is to indicate certain major points at which such discretion can be exercised and to suggest some of the ways in which that discretion is exercised.

The groups having discretion over money flows that are of major significance for the structure of the whole economy are (1) consumers in their disposal of consumer income, (2) financial institutions through the direction in which they lend or invest funds, (3) business enterprises through the acquisition and disposal of funds, and (4) governmental units, particularly the Federal Government, through their acquisition and disposal of funds.

### Directing of Money Flows by Consumers

In chapter II, the expenditure of consumers on current consumption was examined in considerable detail as an indication of the structure of wants. But little attention was given to the factors which affect the magnitude of the total expenditure on consumption, or on the other ways of disposing of consumer income such as through

investment, gifts, and taxes. The choice which consumers are in a position to exercise in the disposal of their income between these categories is of major importance to the structure of the whole economy.[20]

The estimated disposal of consumer income in 1935–36 has already been indicated in chapter II, [21] table I. Approximately 85 percent of the 60 billion of consumer income went for expenditures on current consumption while 10 percent was saved, nearly 4 percent was given away, and 1.5 percent paid to government units in personal taxes.[22]

Data on the disposal of consumer income between taxes, consumption and savings for other periods are lacking, but analysis of the 1935–36 data can throw some light on the way changes in the distribution of consumer income or in its amount might be expected to influence its disposal provided there were no significant price changes and after consumers have become adjusted to the new condition of consumer income. A more equal distribution of a given amount of consumer income appears likely to produce a decrease in the volume of savings and in taxes counterbalanced by an increase in the expenditure on consumption, though the magnitude of changes likely to occur in the near future do not appear to be very significant. The amount of the aggregate consumer savings in 1935–36 is shown in chart VIII. More than half of the positive consumer savings in that period were made by families with incomes over $10,000 while two-thirds were made by families with incomes over $5,000. If the total consumer income were the same but more evenly distributed a smaller proportion would go to the families in the higher income brackets who are likely to save a large proportion of their income and more would go to those likely to spend most of their income on consumption so that total savings would be reduced. Conversely, a less even distribution would

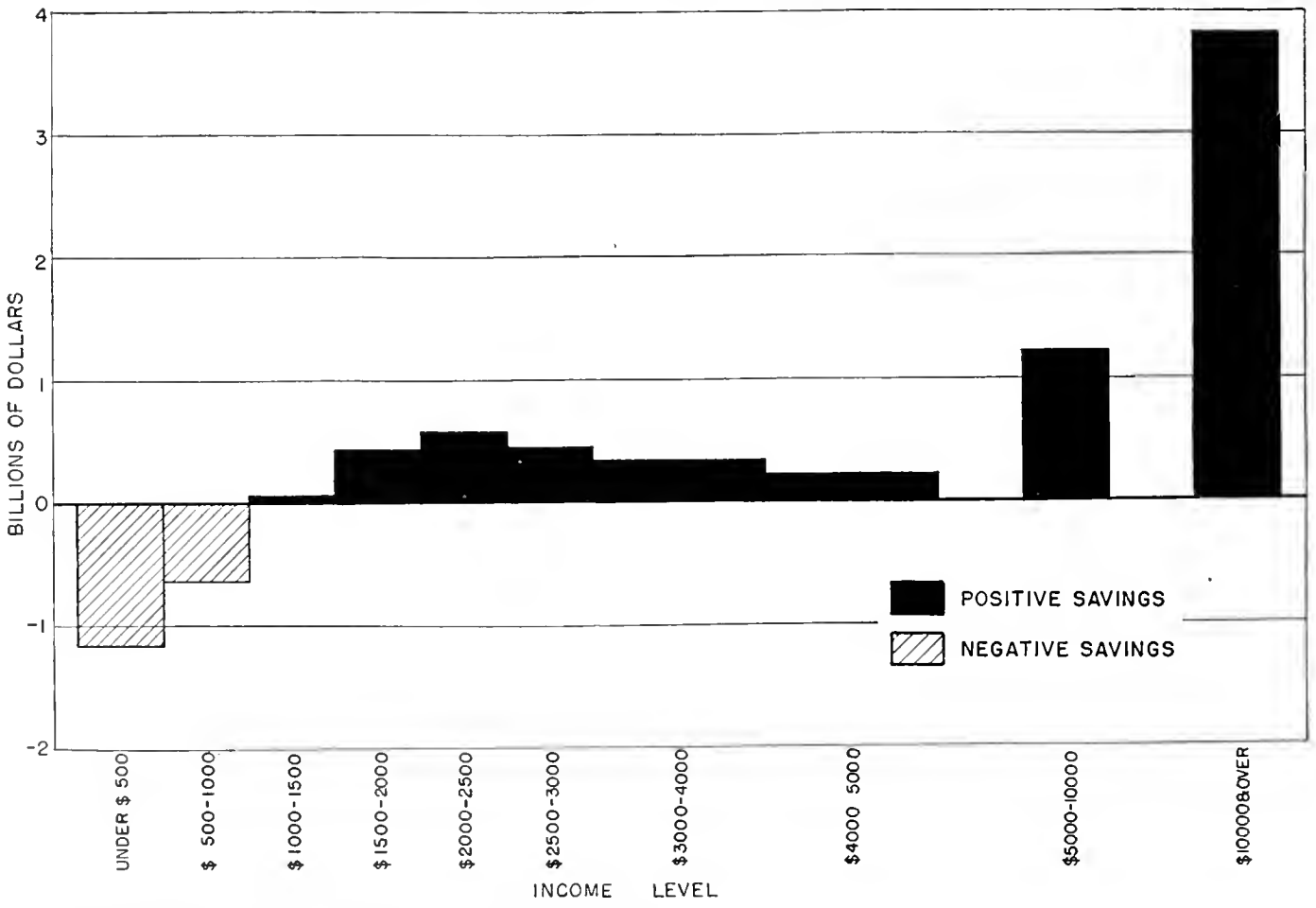
[20] Under any given set of tax laws, consumers presumably have little discretion in the amount of taxes they will pay but the laws levying taxes are to some extent determined by consumer attitudes and reflect the willingness of consumers to be taxed for the services rendered by government units.

[21] See above, p. 11.

[22] No account is taken in the figure for direct taxes of the indirect taxes paid in the purchase prices of goods or the sales taxes added thereto.

CHART VIII

AGGREGATE CONSUMER SAVINGS BY INCOME LEVELS, 1935-1936[1]




Source: *Consumer Expenditures in the United States*, National Resources Committee, 1939.

tend to increase the amount of saving, thereby reducing the total expenditure on consumption.

A very rough idea of the magnitude of the changes in savings likely to result from changes in income distribution can be obtained by making the extreme assumption that the total consumer income in 1935–36 was spent by families having the average income of that period and comparing the resulting disposal of income with the actual disposal in 1935–36. The comparison is made in table IV, using the $1,250 to $1,500 income group to represent the average.[23] This table clearly indicates the tendency for a smaller proportion of consumer income to be saved and a larger proportion to be spent on current consumption as a given consumer income is more evenly distributed. However, with the extreme assumption of equal distribution compared with the actual 1935–36 distribution the absolute shift over from savings to current consumption would amount to less than 5 billion dollars. A shift of 10 percent of the 1935–36 income from consumers with more than average incomes to those with less than average incomes, or the reverse, would be likely to produce a shift of less than 1.6 billion in the total amount saved by consumers. Such a shift in income distribution would not directly alter the aggregate of consumer expenditure to a significant extent compared with the magnitude of the changes associated with depression. It might, however, have a very significant effect on the balance between saving and consumption which make for expansion or contraction of economic activity and of total consumer income.

Of very much greater importance are the variations in savings and expenditures due to variation in the total amount of consumer income. In table V the disposal of consumer income is indicated for four different sizes of income on the assumption that the distribution of the income was in the same proportion as the actual distribution in 1935–36, that prices were the same as in that year, and that the income disposal of each income group followed the pattern of the corresponding group in 1935–36. This table indicates that, under the assumed conditions, both expenditure on consumption and current savings could be expected to increase as consumer income expands, but that the increase in the latter would be likely to be very much more rapid. An increase of consumer income from the 1935-36 level of 60 billion to 80 billion might be expected to bring an increase of something like 13 billions in expenditure on consumption and an increase of nearly 6 billion in consumer savings. Thus an increase in consumer income of 33 percent under the assumed conditions could be expected to result in an increase of only 25 percent in expenditures on consumption and an increase of nearly 100 percent in savings. The assumptions underlying these figures are to arbitrary to make them directly applicable to the actual disposal of income, but they do indicate the character and magnitude of the changes in the proportion of income saved and spent on current consumption.

The evidence they give is clearly supported by the behavior of consumer income and expenditure during the depression as they are reflected in the indexes of chart V already presented. According to these indexes, expenditures on consumption dropped proportionately less from 1929 to 1932 than did consumer income whereas in the recovery period the behavior was reversed. Presumably taxes, gifts and savings together must have dropped proportionately more than income between 1929 and 1932 and recovered more subsequently. While there is no basis for separating out savings from taxes and gifts they must have constituted a sufficiently large proportion of the combined group in 1929 to dominate its behavior so that the greater stability of expenditure on consumption during the depression compared with consumer income must reflect the greater sensitivity to depression of consumer savings.

[23] The average in 1935–36 was $1,502.

TABLE IV.—*Effect of changes in income distribution on the disposal of consumer income*

| | Disposal of consumer income | | Ratios | |
|---|---|---|---|---|
| | With the unequal distribution of income existing in 1935–36, actual disposal | With equal distribution of income, estimated disposal if made in the same proportions as $1,250–$1,500 income group | With unequal distribution of income | With equal distribution of income |
| | *Million dollars* | *Million dollars* | *Percent* | *Percent* |
| Expenditure on consumption | 50,214 | 55,756 | 84.7 | 94.1 |
| Taxes (personal) | 889 | [1] 2,404 | 1.5 | [1] 4.0 |
| Gifts | 2,178 | | 3.7 | |
| Net consumer savings | 5,978 | 1,099 | 10.1 | 1.9 |
| Total consumer income | 59,259 | 59,259 | 100.0 | 100.0 |

Source: Based on data given in *Consumer Expenditures in the United States*, National Resources Committee, 1939.

[1] Breakdown of gifts and taxes by income levels not available.

TABLE V.—*Effect of changes in level of consumer income on consumer expenditures*

[Millions of dollars]

| Disbursement | Disposal of consumer income of— | | | | Percent distribution | | | |
|---|---|---|---|---|---|---|---|---|
| | 50 billion dollars | 60 billion dollars | 70 billion dollars | 80 billion dollars | 50 billion dollars | 60 billion dollars | 70 billion dollars | 80 billion dollars |
| Expenditures on consumption | 44,080 | 50,784 | 57,254 | 63,494 | 88.2 | 84.6 | 81.8 | 79.3 |
| Gifts and personal taxes | 2,455 | 3,113 | 3,814 | 4,541 | 4.9 | 5.2 | 5.4 | 5.7 |
| Net consumer savings | 3,465 | 6,103 | 8,932 | 11,965 | 6.9 | 10.2 | 12.8 | 15.0 |
| Total | 50,000 | 60,000 | 70,000 | 80,000 | 100.0 | 100.0 | 100.0 | 100.0 |

Source: *Consumer Expenditures in the United States*, pt. III, National Resources Committee, 1939.

The tendency for a different proportion of consumer income to be spent on consumption at different levels of consumer income has major significance for the structure of the American economy. When both economic activity and consumer income are declining, the tendency for a larger proportion of consumer income to be spent on consumption must act to some extent as a force minimizing further decline. This influence could be counteracted by other forces, but in itself seems likely to be a significant factor at very low levels of economic activity. Conversely the greatly increased savings at the higher levels of consumer income suggest the possibility of oversaving in relation to expenditure on consumption. This possibility is one which calls for extensive study, both of the probable savings at different levels of consumer income and the opportunities for the effective use of savings.

**Directing of Money Flows by Financial Institutions**

To the extent that consumers invest their savings directly in new capital goods such as the construction of new homes or the development of privately owned enterprises, or to the extent that they loan their savings to others for expenditures on consumption, consumers determine the direction of the flow of funds into captial formation or current consumption. But to a significant extent current consumer savings are either held in the form of money or are handed over to financial institutions—banks, insurance companies, and similar institutions. In either case the financial institutions are placed in a position to determine the direction of flow, providing funds to finance current consumption as in the case of installment sales or consumer credit, to finance business enterprise, to finance government activity, or to finance individuals or other financial institutions purchasing securities. Investment funds directed into these different channels have quite different effects, those made available directly to consumers and to business enterprises going largely to finance consumption and capital formation respectively. To the extent that government is financed or to the extent that other security purchases or lenders are financed, the determination of whether the funds flow into consumption or capital formation channels is passed along. No attempt can be made here to disentangle these flows. Much data on various phases are available but they have never been put together into a comprehensive analysis. There is much need for tracing through the magnitude and characteristics of the different money flows involved in the investment of savings to discover their structural significance.

In addition to the handling and direction of investment funds, financial institutions are also in a position to dispose of income and depreciation funds arising from their current operations. Because the problems arising from the disposal of such funds are alike for all corporations whether financial institutions or producing corporations, they will be taken up under the heading of business corporations.

**Directing of Money Flows by Business Corporations**

In the course of their operations many if not most corporations receive more money from the sale of their products than they expend for the raw material, labor, supplies and services necessary to their production. Part of this sum is customarily allocated to depreciation, part is paid to government in taxes and part may be used to pay interest charges. The remainder represents net income which is within the disposal of the corporation. It can either distribute this money to consumers as income subject to their disposal or it can save the money, investing it in securities, using it to finance new plants or inventories, extending credit on the basis of it or holding it as an addition to the corporation's money balances. In addition, corporations which have accumulated undistributed income in prior years can dissave by declaring dividends, paying out money in excess of that received as income and depleting their cash balances, reducing their investments or reducing their capital assets in the process. A corporation may thus be in a position to save out of its current income or dissave out of prior income with much the same effect as the saving or dissaving of consumers. This ability of corporations to save or dissave is of importance to the structure of the whole economy because it means that corporations can exercise some control over money flows which is independent of the direct processes of production. By saving part of their income, corporations add to the total of national money savings which must find an outlet through investment channels.[24] By dissaving through distributing dividends in excess of their current income, corporations can make a net contribution to consumer income.[25] The magnitude of corporate saving or dissaving is not directly dependent on productive activity and is therefore a more or less independent factor in the determination of money flows.

The discretion of a corporation over the disposal of income is paralleled by a second discretion of a similar nature, that over the disposal of funds allocated to depreciation. In carrying on productive activity, corporations make use of plant and equipment whose remaining useful life is steadily reduced through this use and through obsolescence with the passage of time. Many corporations also use up reserves of natural re-

[24] There is presumably a net contribution only if the total funds allocated to depreciation are also invested in new capital formation.

[25] If corporate income is distributed as dividends presumably some of the resulting consumer income would be saved but not all as would be the case with undistributed corporate income.

sources such as ore or coal in their current production. Since a corporation's acquisition of plant, equipment and natural resources presumably involved an initial capital outlay, the corporation must derive enough from its current operations to recover the current share of this capital investment[26] before its accountants can figure that the corporation has obtained a net income. The current share of the previous capital investment is customarily included by accountants as a depreciation charge[27] and included as a cost of the operations of a given period whether earned or not. If the operating receipts of a corporation are not sufficient to cover both operating costs and depreciation, the enterprise has suffered an accounting loss. To the extent that its receipts from operations are in excess of its operating costs, the extra receipts are allocated to depreciation to the amount necessary to cover this item, any extra receipts being available for the payment of income taxes, interest, and dividends.[28]

Any funds allocated to depreciation must be considered as a return of previously invested capital and play much the same role in the flow of money as that played by corporate savings. Such funds can be accumulated as a cash balance, invested in securities or invested in new plant, equipment, and inventories. In any case, so far as the flow of money is concerned, they represent investment funds available to finance capital formation just as much as corporate savings out of income. In order to maintain the circuit flow of money, the funds allocated by corporations to depreciation must find an outlet directly or indirectly in new capital formation except as they are used to finance interest or dividend payments in excess of current income.

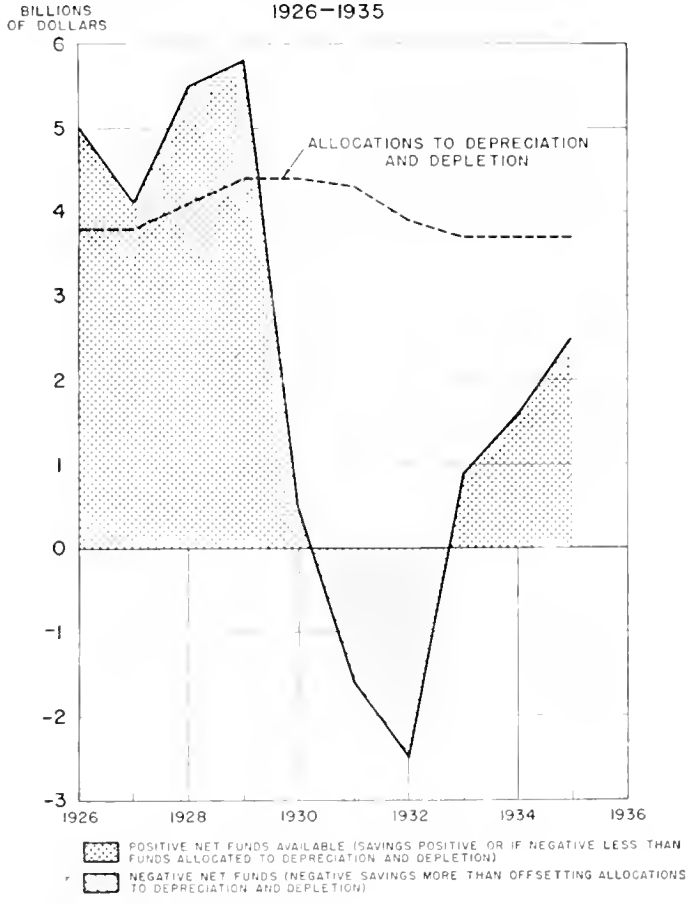
The magnitude of corporate savings and depreciation (including depletion) is indicated in chart IX which gives figures for all corporations from 1926 to 1935. Corporate savings are added to depreciation so that in 1926 the total of such funds available for capital formation amounted to approximately 5.0 billions composed of 1.2 billions of corporate savings and 3.8 billions of funds allocated to depreciation. In years in which corporate savings are negative they constitute a deduction from the depreciation funds which would otherwise have been available for capital formation. In 1931 and 1932, negative savings were so great that they more than cancelled depreciation with the result that nonfinancial corporations as a group appear to have made a net contribution to consumer buying power, either through operating deficits or through interest and dividends payments in excess of income plus depreciation charges.

As could be expected, depreciation charges remained fairly stable throughout the period, declining somewhat with the decline in capital formation during the depression but on the whole reflecting the relative stability in the productive assets of corporate industry. In contrast to depreciation charges, corporate savings fluctuated widely in response to the depression. At their maximum in 1929 they amounted to 1.4 billions and declined to a low of minus 6.4 billions in 1932, recovering to minus 1.2 billions in 1935.

*Corporate funds derived from security issues.*—In addition to corporate funds derived from operations and available for capital formation, corporations derive a significant volume of funds to finance capital formation from the issuance of new securities. While many data on security issues by corporations are available, no clear segregation of issues into those financing capital formation and those financing the purchase of other securities or of existing properties has been made except in the one year 1929. The total of new corporate issues

CHART IX

**CORPORATE FUNDS DERIVED FROM OPERATIONS AVAILABLE FOR CAPITAL FORMATION**




Source. See appendix 18, section 16.

[26] This is usually arrived at by distributing the initial cost of the plant or equipment over its probable useful life. Various methods have been developed for making this allocation.

[27] Or depletion charge where ore, coal or similar reserves are used up.

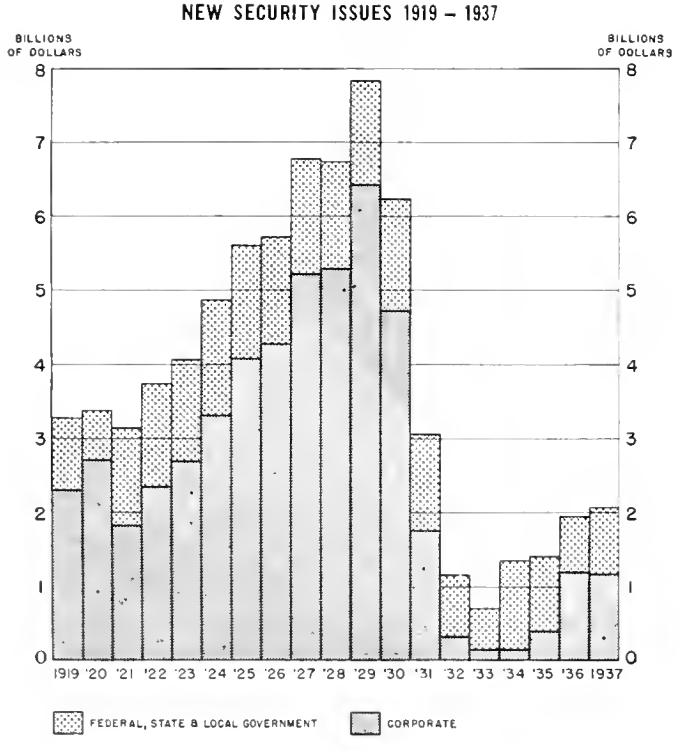
[28] This is necessarily a very generalized statement of the customary procedure. In practice there are many details, minor exceptions and special cases but they do not effect the basic character of the procedure.

whose proceeds were used primarily to pay for the construction of new plant, the purchase of equipment or addition to inventory amounted to approximately 2 billion dollars in that year.[29] This amount was less than half the sum of corporate savings and allocations to depreciation and depletion in the same year.

A rough indication of the violence of the swings in the issuance of new corporate securities is given in chart X which shows the total of *all* corporate securities except those issued for refunding purposes between 1919 and 1937. These data include both the securities issued to purchase other securities and those providing funds for capital formation. In 1929, the latter item amounted to only 30 percent of the total, indicating the very large volume of new securities issued in that year to purchase other securities. In other years the proportion may not have been so great but in any case the volume of new securities shown in the chart greatly exaggerates the volume of the funds raised to finance new capital formation. However, the chart does show the violent decline in new corporate securities issued after 1929 and the very slight recovery since 1932. It is thus clear that there was a big decline in the funds obtained by corporations both from new security issues and from their own operating activity with which to purchase new capital formation. This is consistent with the great depression sensitivity of the capital goods industries already noted.

[29] G. A. Eddy, "Security Issues and Real Investment in 1929," *The Review of Economic Statistics*, May 1937.

CHART X




Source: See appendix 18, section 17

*Unincorporated business enterprises.*—Unincorporated business enterprises are also in a position to direct funds to some extent between capital formation and current consumption. Such enterprises borrow funds and can use them either to extend consumer credit or to acquire new plant, equipment or inventory. Likewise, many unincorporated enterprises deduct depreciation from their receipts before arriving at their net income.[30] To this extent they present the possibility of directing money flow. But most unincorporated enterprises do not deduct depreciation in arriving at their income while the income of an unincorporated enterprise is usually directly available to its owner and no sharp distinction can be maintained between the savings out of income made by the owner and the savings out of income made by the enterprise. As a result, in sketching the structure of the American economy, there is no significant error involved in regarding all the income of unincorporated enterprises as part of consumer income and disregarding depreciation.

### Directing of Money Flows by Government Units

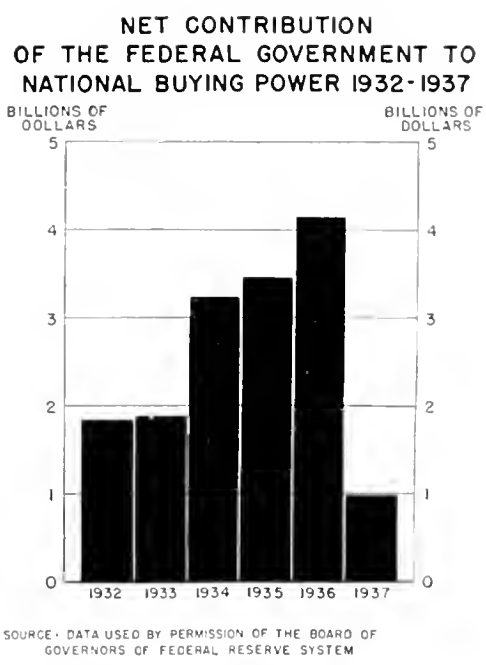
The Federal Government has more flexibility in the directives which it can exercise over money flow than any of the other groups mentioned. Neither financial institutions nor business corporations can appropriately spend money directly on final consumption. The bulk of consumers cannot invest money directly in productive activity which they are in a position to carry on. The Federal Government is not only expected to do both of these things but it can, within limits, derive the funds to do either or both from taxation or from borrowing. It can go even further and issue its own money if necessary and can give money away as in the case of direct relief payments. Altogether the flexibility of the Federal directives over money flow is great.

The way in which the Federal Government has contributed to consumer buying power in recent years is indicated in chart XI which shows the net contribution in each year from 1932 to 1937. The peak contribution to buying power in the recovery period was in 1936 when over 4 billions of dollars was paid out by the Federal Government in excess of the amounts collected in taxes, tariffs, and the like. This was followed by a very sharp reduction in the Federal contribution to consumer-buying power in 1937.

State and local governments are also in a position to direct the flow of money to some extent through taxes and borrowings expended on both current consumption

[30] In the bulk of individual enterprises, particularly in the case of farmers, no depreciation is deducted in arriving at income but rather many capital expenses are charged to current operations. Over a longer period much the same figures for total of income may be obtained.

CHART XI




and public works. However, they have not the flexibility of the Federal Government nor do they represent the possibility of such a large volume of money flows capable of being subjected to a single basic policy as is the case with Federal funds.

TABLE VI.—*Money expenditures on gross capital formation and on consumption*

[Millions of current dollars]

| Year | Expenditures on gross capital formation [1] | Changes in business inventories [2] | Consumer expenditures [3] |
|---|---|---|---|
| 1929 | 17,572 | +2,414 | 62,300 |
| 1930 | 14,419 | −1,128 | 56,568 |
| 1931 | 9,513 | −1,375 | 49,840 |
| 1932 | 5,568 | −2,461 | 40,806 |
| 1933 | 5,099 | −1,129 | 39,187 |
| 1934 | 8,453 | −1,524 | 43,423 |
| 1935 | 10,857 | +19 | 47,784 |

[1] Source: Kuznets, Simon, *Commodity Flow and Capital Formation*, vol. I, p. 484. This item represents expenditure on gross capital formation exclusive of net changes in claims against foreign countries, of all repairs and maintenance and of consumers' movable, durable commodities, but includes net changes in stocks of gold and silver.
[2] Source is same as above.
[3] See appendix 18, section 12.

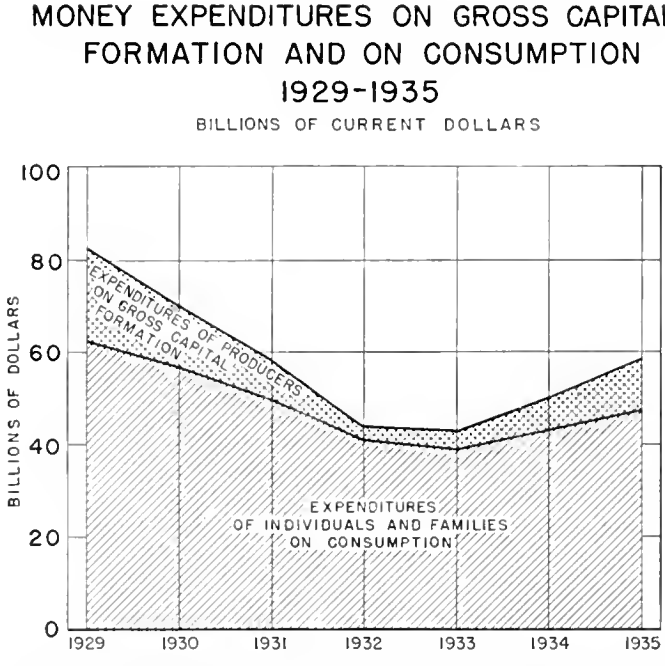
### Total Expenditure on Consumption and Capital Formation

All of these money flows operate to stimulate productive activity. Consumer expenditure provides the ultimate basis for financing current production. Savings and allocations to depletion and depreciation provide the basis for financing capital formation whether in the form of fixed assets or additions to inventory. The magnitude of these items from 1929 to 1935 is indicated in terms of current dollars in table VI and summarized in chart XII. The great depression drop in consumer expenditures and the much greater drop in the expenditures on fixed capital are clear. Expenditures for additions to inventory show a more erratic behavior, partly varying with other forms of expenditures but to a considerable extent varying independently. The variations in these expenditures combined with variations in prices, still to be discussed, largely determine the variations in the level at which resources are used.

### Need for Intensive Investigation of Money Flows

In this chapter an attempt has been made to sketch the major money flows overlying production and to point to some of their major characteristics. Neither the collection nor analysis of data has developed to the point where it is possible to block in a clear and balanced picture of the actual money flows as they affect production. Here and there parts of the total picture have been indicated in the preceding pages, but they constitute only fragments. There is great need for intensive work to develop the whole picture. This chapter can serve only to indicate the importance of money flows to the functioning of production and suggest the character of an analysis of money flows which would clarify the structure of production and throw light on the behavior of the American economy.

CHART XII




Source: For Expenditures of producers on gross capital formation, see Simon Kuznets, *Capital Formation and Commodity Flow*, vol. I, table VIII-2, p. 484. For expenditures of individuals and families on consumption, see appendix 18, section 12.

# CHAPTER VII.—THE ORGANIZATIONAL STRUCTURE

The first part of this report has outlined the economic basis for production—the wants of American consumers and the resources of the nation available to satisfy these wants. The second part has set forth the more important characteristics of production—its geographical distribution, its functional aspects, and the overlay of financial flows which prick out the pattern of productive activity: It is the purpose of this third part to examine the organizing influences which weld the millions of separate individuals engaged in production into what is essentially a single national economy.

The way in which the millions of workers in the American economy are organized into a functioning whole is far from simple. Even the supplying of a single commodity like gasoline calls for the services of a multitude of separate individuals and agencies. An oil operator brings oil to the surface of the ground; the local government prevents the theft of oil or destruction of equipment; a railroad corporation transports the oil; State and Federal Governments prevent interference with the transport of oil; a refining company maintains an organization of workers and chemical equipment to convert the oil into more useful forms; a retail distributor parcels out the resulting gasoline in small quantities to individuals requiring it; the Federal Government supplies a dependable medium of exchange, which allows the oil operator, the railroad, the refining company, and the retailer to act easily in an organized fashion without being under a single administrative authority, and enforces contracts so that organizing arrangements on specific points can be more safely entered into; finally, government maintains a system of highways and byways which allow an ultimate consumer to combine the gasoline with other resources under his control in satisfying his desire for automobile travel. This joint activity of many individuals contributing to satisfy the demand for a particular product is typical of most production and represents a high degree of organization in the use of resources.

## Basic Continuity

Underlying this organization and essential to its existence is the basic continuity in human wants and human actions as today's activity grows out of and repeats that of yesterday, yet varies from it in greater or less degree. The influence of essential repetition in wants and in the techniques employed to fill wants is so all-pervasive that it is often overlooked, yet without it the existing organization of resources could hardly have arisen or continued to function. The farmer plants wheat, not because of some contract with an ultimate consumer, but simply because of an assumed continuity in the demand for bread. The business man, in setting up a new cotton mill to make cloth for men's shirts, is impelled to do so very largely by a belief in the continuity in the demand for shirts. The tobacco grower and the cigarette manufacturer both base their actions on the belief that the practice of smoking cigarettes will continue in the immediate future.[1]

Likewise, there is continuity in techniques, for the methods of doing things, in the aggregate, do not change overnight. Constant improvements in techniques are made, but as a rule they are introduced into practice gradually over a period of years. The automobile did not replace the horse in a single season. Continuous-strip rolling mills did not replace older, less efficent mills, in a single year. The process of old rolling mill displacement has been going on for a decade and is not yet complete. Ways of doing things in the immediate future are not going to be essentially different from the ways of the immediate past, though the scientific knowledge of improved methods may exist and though gradually over a period of years great changes may take place.

This continuity in wants and techniques is the most basic factor underlying the organizing of resources. Without a large measure of continuity, chaos would result. Minor breaks in continuity can be taken care of through the price mechanism, through administrative adjustments, through alternation in the canalizing rules, and through shifts in goals accepted. But where continuity breaks down to a significant extent as in the case of flood or fire or panic, loss of foreign markets or war, strike or technical breakdown, the effective organization of resources itself breaks down and often drastic steps have to be taken. Such is usually the case when martial law is declared after a disaster, and the service of protection and the service of supply have to be organized afresh. Such also was the case with the accumulated farm surpluses of the depression, which resulted, in part, from lack of continuity and produced intervention on the part of both political parties. Such also was the intervention during the war, when the railroads became clogged with war supplies and a unified command was necessary to disentangle the traffic snarl. The positive intervention that is necessary when continuity breaks down to a serious extent suggests the importance of this factor to the effective organization of resources.

[1] Evidences of essential continuity in wants and techniques of production are set forth in *Patterns of Resource Use*, National Resources Committee, 1938.

## Organizing Influences

Within the conditions established by continuity in wants and techniques the complex organization of resources is brought about and maintained through four major organizing influences. First, there is the market mechanism—the interaction of individuals or groups buying and selling in the market. A second major organizing influence takes the form of administrative coordination, as the activities of individuals in factory, corporation, or government bureau are directed and interrelated by a common authority. A third influence is the canalizing action of laws, rules, and customs whereby the community shapes and molds and limits and canalizes the actions of many separate individuals into coordinated form without the exercise of direct administrative control. Finally, there is the organizing influence arising from the acceptance of common goals which can bring about coordinated action of separate individuals without the presence of any common authority. In practice, these four organizing influences interplay and reinforce each other, sometimes one and sometimes another being the more significant in a particular situation. For the nation as a whole, it is the combined influence of these four factors which results in the organized use of resources and yields that level of living which characterizes the American economy.

### The Market Mechanism

Of the influences actually bringing about the organization of productive activity, the market mechanism is the most generally recognized. Through price, and through buying and selling in the market, the activities of many separate individuals or enterprises are brought into mesh with each other. In the market, the price of an article can act, after a fashion, as a regulator. If insufficient resources are being employed in making a particular article and oversufficient resources are going into another article, an increase in the price of the first and a fall in the price of the second will stimulate individuals controlling the necessary resources to divert a part of them into the first activity and out of the second. A relative increase in the price of shoes as compared with saddles would tend to guide leather and labor away from use in saddles and into the making of shoes. The proportion of cotton and corn planted on Arkansas farms varies from year to year with changing relationships in the prices of those crops and reflects the operation of the market as an organizing influence.

Sometimes this market mechanism is credited with being the major, or even the sole, organizer of resources. In theory it is possible to show that, under certain conditions, the market mechanism might, by itself, have sufficient organizing influence to produce effective use of resources. In the case of a great many commodities, however, free markets do not and usually cannot exist, and the market mechanism acts only crudely, slowly, and not too effectively in bringing basic organization into the use of resources.

### Administrative Coordination

Administrative coordination has become of increasing importance as an organizing influence. A century ago, when business enterprises were small and government activity was relatively less important, the market played a major coordinating role. But during the past hundred years great segments in the organization of economic activity have gradually but steadily been shifted from the market place to administrative coordination.

The extent of administrative coordination of economic activity is difficult to realize. Today, hundreds of thousands of workers may be organized in a single great enterprise. Within the enterprise, their activity is coordinated, not through the shifting of prices and supply and demand in the market, but through administrative direction. The largest enterprise, the American Telephone and Telegraph Co., in 1929 was coordinating the activity of over 450,000 persons within its system. Consider the vast difference between this situation and the thousands of separate and independent enterprises such as would have to exist if economic organization in the telephone industry were accomplished primarily through the market place. An effective telephone system would not be possible without a high degree of administrative coordination. In the field of government, likewise, the organization of resources within each government body is to a large extent brought about through administrative coordination. Large-scale enterprise and the extension of the economic role of government together have made administrative coordination a major factor in the organization of resources.

### Canalizing Rules

A third means by which organization is brought about is through canalizing rules whereby the action of individuals is molded and limited without being subject to administrative control. Laws, rules, and regulations, accepted procedures, and binding customs constitute canalizing influences which narrow down the scope of individual action without determining it. They supply the traffic regulations for the ceaseless interplay of human activities. If effective, they contribute to the organization of resources by limiting action which will disrupt or impede effective use and by facilitating the flow of action into constructive channels.

### Accepted Goals

Finally, the acceptance of common goals is, of itself, an organizing influence. A number of people, having accepted a common goal, may be able to act independently and without communication, yet their activities may be to a greater or less extent coordinated by the logic of their accepted goal. The acceptance of a specific goal by the management of an enterprise, as a contract to fill a big order, for example, can spur the individuals in the management to independent though coordinated action, as each, knowing the meaning of the big order in terms of the functions for which he is responsible, acts to carry out his share in the undertaking even before he is given specific instructions.

### The Complex Play of Organizing Influences

These four organizing influences—the market mechanism, administration, canalizing rules, and accepted goals—all combine to give that complex organization of resources, without which daily living as we know it would not be possible. The major organizational problem involved in seeking more effective use of resources is, therefore, to discover the appropriate role to be played by each of these organizing influences. How much can be left to continuity and the inertia of continuity? How far can reliance be placed on the organizing influence of accepted goals? How much reliance can be placed on the market mechanism? How much coordination can be supplied through canalizing rules? At what points can administration provide more effective organization?

The role which each influence plays at different times and at different places will vary; but hardly any significant event occurs without some element of organization being contributed by each of these four influences. While each can be discussed separately, their actual operation in the American economy is so closely interrelated that their separate roles cannot be easily disentangled. The market mechanism would not be an effective influence for organizing the activity of separate economic units on a large scale if it were not for the existence of canalizing rules, whether these rules are codified into law as in the case of the enforcement of contracts, are formal but nonlegal rules such as the trading rules of the wheat pit and the stock exchange, are informal rules such as the "one-price" rule accepted by buyer and seller alike in most American retail stores in which there is no bargaining with customers,[2] or take the form of the custom of accepting money in exchange for goods. Neither could it function effectively in the absence of an accepted goal, namely, the goal of transacting business.

Administration alone is equally incapable of organizing resources on the scale of the whole American economy. Even in the case of the largest administrative units of government and of business, some of the burden of organizing resources is carried by the market as workers are hired, raw materials purchased, and goods sold, while, without the organizing influences of accepted goals, the minute detail in administrative direction which would be required would make large administrative units impossible.[3]

Though these four different organizing influences are not in practice independent of each other, it is possible to speak of particular situations as dominated by one or another of the four factors. Thus, it is usually appropriate to refer to the activity carried on within a particular factory or government bureau as organized administratively. The administrative influence dominates activity even though a supplementing role is played by the other three influences. If, in a particular community, practically all activity is carried on by one-man enterprises and the products are swapped through the market, it would be appropriate to say that the activity was organized primarily by the market, even though other organizing influences were present. The political field sometimes gives an example of organized activity in which the acceptance of a common goal, the election of a particular candidate nominated by the party, is the dominant organizing influence. National unity in time of war or depression is another example of the coordinating influence of an accepted goal. Obvious examples of situations in which canalizing rules play dominant roles are city zoning and the regulation of traffic.

For the American economy as a whole it is not possible to say that any one of these organizing influences is the dominant one. Each appears to play a significant role. The remainder of this chapter will be devoted to an examination of the extent to which each organizing influence contributes to the organized use of resources. Since the market consists of transactions between administrative units within which coordination is primarily administrative, the first of the organizing influences to be considered will be administration. The role of the market will then be discussed, and, finally, the roles of canalizing rules and accepted goals.

[2] The extent to which this informal "one-price" rule contributes to the organization of economic activity is difficult to realize until comparison is made with the operations of an oriental bazaar where the prices of even minor items are the subject of time-consuming higgling and bargaining. A modern department store could not survive if each sales clerk had to bargain with each customer on the price of each article purchased. Nor could it survive if each customer spent several minutes trying to get a penny reduction in the price of a spool of thread. Only by the acceptance by both buyer and seller of the informal rule of "one-price—no bargaining" can efficiency in retailing be maintained.

[3] The reliance which administrative units place on the acceptance of common goals can be appreciated by considering what would happen in a big corporate enterprise if subordinates did nothing during working hours except those things which they were specifically told to do by the president of the corporation, either directly or through his subordinates. In such a situation the president could leave no decision to subordinates.

### Extent of Administrative Coordination

A rough indication of the extent of administration in the American economy can be obtained by examining the size of economic units in different segments of the economy. For this purpose the significant economic unit would be the administrative unit and would include all the productive activity under a single administrative control. The separate producing units would include the independent farm enterprise, the private business or professional enterprise, the corporate enterprise including legally controlled subsidiaries as part of the parent enterprise, the Federal Government and each State and local government, independent universities and independent church units. On this basis there must have been in 1937 between 10 and 12 million economic units producing commodities or rendering services and engaging the activity of approximately 48,000,000 persons either part or full time. Of these, approximately 6.8 million were farm units, nearly 20,000 were government units, and 1.7 million were business units reporting to the Social Security Board or to the Interstate Commerce Commission. The remainder were for the most part service and professional units and very small business units. A crude indication of the relative importance of producing units of different sizes is given in table I. This table tends to minimize the importance of the large enterprises because it treats subsidiaries of a corporation as though they were independent units, but until compilations for consolidated enterprises have been made, it does serve as a rough guide to the importance of producing units of different sizes.

TABLE I.— *Distribution of producing units and their employment,*[1] *by number employed, 1937*

[Treating subsidiaries of a corporation as independent units]

| Number employed | Number of producing units | Percent of total employed |
|---|---|---|
| 1–5 | 9,368,000–10,868,000 | 30–35 |
| 6–299 | 696,564 | 28–33 |
| 300–999 | 11,762 | 9–12 |
| 1,000–9,999 | 3,549 | 12–16 |
| 10,000 and over | 246 | 11–14 |
| Total | 10,080,000–12,080,000 | 100 |

Source: See appendix 18, section 18.

[1] Rounded figures

NOTE.— The bulk of the data on number employed and employer units, excluding agriculture, are derived from Social Security Board data on employer returns. Since the returns of subsidiaries of a parent corporation are not consolidated in the Social Security Board data, the economic units and the number employed in the class, 10,000 and over, are seriously understated, with a corresponding overstatement of these in the classes under 10,000. For example, General Motors Corporation is represented as an economic unit 54 or more times. It has not been possible to correct for this lack of consolidation.

It indicates that over a third of the manpower engaged in production in 1937 was attached to administrative units of 300 persons or more, while approximately one-eighth was employed in administrative units of 10,000 persons or more. These figures are very rough approximations, but they do indicate the extensive role which is played by administrative units in the organization of resources.

It would be desirable to present a similar analysis using capital assets employed rather than manpower as a measure of size, but data for this analysis are not available. There is, however, considerable evidence that on the whole there is more capital employed per worker in the large administrative units than in the small units, with the possible exception of the farm. As a result the administrative units employing 300 or more persons would be employing more than a third of the capital assets of all producing units.

### Major Administrative Units

Some indication of the extent of administrative coordination in particular segments of economic activity can be obtained by listing the largest administrative units in the country and examining the scope of their activities. In table II an attempt has been made to list the 200 largest nonfinancial corporations, the 50 largest financial corporations, and the 20 largest government units in 1935. In the case of the corporations, size has been measured in terms of the assets controlled directly or through subsidiaries, while the size of the government units listed has been measured by the number of persons employed.[4] Various other measures of size could be employed such as contribution to national income or in the case of business enterprises, the volume of sales or value added by manufacture. Different measures of size would give some differences in the specific list of units included as largest but a large proportion of the units listed in table II, except perhaps the financial companies, would be included among the largest corporations on almost any reasonable basis of measuring size. Data on the number of employees of many of the largest companies are published in *Moody's Manuals* and are also included in the table, even though the data for the different companies are not directly comparable, sometimes including employment by subsidiaries as well as employment in foreign countries and sometimes excluding one or both of these items. It is probable that there are some big administrative units not included in the above list, because no public data on them were available. However this list includes most of the major administrative units in the American economy.

[4] The method of arriving at the 200 largest nonfinancial corporations in 1935 is set forth in detail in appendix 10. In the case of each of 185 of the companies, the figure given for total assets is a consolidated figure published in *Moody's Manual* (except that where depreciation and depletion were included in total liabilities these were deducted from total assets), and represents the total assets less depreciation and depletion of the parent company named and subsidiaries which it has chosen to consolidate in the report made available to Moody's Investment Service. In the case of 15 companies no such figure was available, and an estimate of total consolidated assets, less depletion and depreciation was made by methods indicated in the appendix.

In the case of the 50 largest financial corporations, the assets reported above are obtained directly from *Moody's Manuals*.

The employment figures for the 20 largest government units are derived from sources indicated in appendix 18, section 17.

TABLE II.—*Largest administrative units*

(200 largest nonfinancial corporations, 50 largest financial corporations, and 20 largest governmental unit )

| | Assets, 1935 (millions of dollars) | Number employed, 1935 (thousands) |
|---|---|---|
| INDUSTRIALS | | |
| Standard Oil Co. (New Jersey) | 1,894 9 | 50 |
| United States Steel Corporation | 1,822.4 | 193 |
| General Motors Corporation (estimated) | [1] 1,491. 9 | 212 |
| Socony-Vacuum Oil Co., Inc | 789. 7 | 55 |
| Standard Oil Co. (Indiana) | 693. 5 | 35 |
| Ford Motor Co | 681. 6 | ---- |
| Bethlehem Steel Corporation | 673. 1 | 51 |
| Anaconda Copper Mining Co | 581. 5 | 25 |
| E. I. DuPont de Nemours & Co | 581. 1 | 41 |
| Standard Oil Co. of California | 579. 5 | 18 |
| The Texas Corporation | 473. 8 | ---- |
| Gulf Oil Corporation | 430. 2 | ---- |
| General Electric Co | 398. 1 | 56 |
| International Harvester Co | 365. 2 | 46 |
| Shell Union Oil Corporation | 358. 1 | 29 |
| Consolidated Oil Corporation | 331. 1 | 25 |
| The Koppers Co. (estimated) | [1] 331. 0 | 7 |
| Kennecott Copper Corporation | 323. 6 | ---- |
| Swift & Co | 321. 4 | 60 |
| Armour & Co. (Illinois) | 317. 1 | 59 |
| Republic Steel Corporation | 297. 5 | 47 |
| Union Carbide & Carbon Corporation | 271. 1 | ---- |
| The American Tobacco Co | 264. 2 | 10 |
| Pullman Incorporated | 258. 6 | 27 |
| Allied Chemical & Dye Corporation | 252. 5 | ---- |
| Sears, Roebuck & Co | 234. 0 | 46 |
| Aluminum Company of America | 223. 0 | 18 |
| American Can Co | 209. 1 | ---- |
| Youngstown Sheet & Tube Co | 207. 5 | 17 |
| Westinghouse Electric & Manufacturing Co | 194. 5 | 37 |
| Chrysler Corporation | 193. 5 | 65 |
| F. W. Woolworth Co | 192. 3 | 59 |
| The Goodyear Tire & Rubber Co | 192. 3 | 18 |
| National Dairy Products Corporation | 192. 0 | 35 |
| The Great Atlantic & Pacific Tea Co. of America | 189. 2 | 90 |
| Phelps Dodge Corporation | 185. 1 | 7 |
| Jones & Laughlin Steel Corporation | 185. 0 | 24 |
| United Fruit Co | 184. 9 | ---- |
| Tide Water Associated Oil Co | 182. 8 | 11 |
| National Steel Corporation | 180. 5 | 20 |
| Singer Manufacturing Co | 175. 8 | ---- |
| Phillips Petroleum Co | 174. 5 | 8 |
| American Smelting & Refining Co | 171. 7 | 26 |
| Liggett & Myers Tobacco Co | 170. 5 | 20 |
| Montgomery Ward & Co., Inc | 168. 7 | 31 |
| Warner Bros. Pictures, Inc | 168. 5 | 12 |
| Eastman Kodak Co | 168. 3 | 29 |
| The Atlantic Refining Co | 163. 0 | ---- |
| United States Rubber Co | 159. 3 | 46 |
| American Radiator & Standard Sanitary Corporation | 150. 1 | 26 |
| The Pure Oil Co | 147. 2 | 10 |
| R. J. Reynolds Tobacco Co | 153. 9 | 15 |
| Union Oil Company of California | 151. 7 | 8 |
| Glen Alden Coal Co | 151. 4 | 20 |
| Pittsburgh Coal Co | 142. 2 | 12 |
| Ohio Oil Co | 139. 7 | 6 |
| The Firestone Tire & Rubber Co | 139. 3 | 2 |
| Loew's Incorporated | 128. 6 | ---- |
| Hearst Consolidated Publishers, Inc | 128. 6 | ---- |
| The Procter & Gamble Co | 127. 1 | 10 |
| National Biscuit Co | 124. 5 | 18 |
| The B. F. Goodrich Co | 124. 0 | 30 |
| The American Rolling Mill Co | 123. 0 | 15 |
| The Borden Co | 120. 1 | 30 |
| Paramount Pictures, Inc | 118. 9 | ---- |
| Corn Products Refining Co | 118. 7 | 4 |
| S. S. Kresge Co | 118. 5 | 20 |
| Inland Steel Co | 118. 3 | 10 |
| The American Sugar Refining Co | 117. 7 | ---- |
| Wheeling Steel Corporation | 113. 0 | 18 |
| Pittsburgh Plate Glass Co | 109. 7 | 14 |
| Crucible Steel Co. of America | 109. 1 | ---- |
| Sun Oil Co | 107. 1 | 12 |
| National Lead Co | 104. 0 | 6 |
| Radio Corporation of America | 102. 5 | 23 |
| Crown Zellerbach Corporation | 101. 3 | 7 |
| International Shoe Co | 83. 2 | 30 |
| The Lehigh Coal & Navigation Co | 82. 0 | ---- |
| Gimbel Bros , Inc | 79. 9 | 13 |
| Deere & Co | 79. 7 | 15 |
| Wilson & Co , Inc | 79. 2 | 18 |
| Climax Molybdenum Co | 79. 1 | ---- |
| Minnesota & Ontario Paper Co | 78. 2 | ---- |
| The Cudahy Packing Co | 76. 4 | ---- |
| Brown Co | 76. 4 | ---- |
| J. C. Penney Co | 74. 4 | ---- |
| St. Regis Paper Co | 73. 7 | ---- |
| Marshall Field & Co | 97. 0 | ---- |
| United Shoe Machinery Corporation | 96. 4 | ---- |
| General American Transportation Corporation | 96. 3 | ---- |
| Crane Co | 95. 2 | ---- |
| Continental Can Co., Inc | 94. 6 | ---- |
| Philadelphia & Reading Coal & Iron Corporation | 93. 0 | ---- |
| Continental Oil Co | 91. 7 | ---- |
| American Car & Foundry Co | 91. 2 | ---- |
| R. H. Macy & Co , Inc | 90. 5 | ---- |

[1] Estimated on the basis indicated in table 1, appendix 10.

TABLE II.—*Largest administrative units*—Continued

| | Assets, 1935 (millions of dollars) | Number employed, 1935 (thousands) |
|---|---|---|
| INDUSTRIALS—continued | | |
| Allis-Chalmers Manufacturing Co | 73. 2 | ---- |
| U. S. Smelting, Refining & Mining Co | 73. 0 | ---- |
| Columbia Oil & Gasoline Corporation | 71. 8 | ---- |
| McKesson & Robbins, Inc. (Maryland) | 71. 4 | ---- |
| American Woolen Co | 71. 0 | ---- |
| S. H. Kress & Co | 70. 4 | ---- |
| The Baldwin Locomotive Works | 69. 7 | ---- |
| The Cleveland Cliffs Iron Co | 69. 5 | ---- |
| American I. G. Chemical Corporation | 69. 3 | ---- |
| General Foods Corporation | 67. 9 | ---- |
| Interlake Iron Corporation | 67. 4 | ---- |
| PUBLIC UTILITIES | | |
| American Telephone & Telegraph Co | 3,998. 3 | 270 |
| Consolidated Edison Co. of New York, Inc | 1,377. 0 | 45 |
| Commonwealth & Southern Corporation | 1,173. 8 | ---- |
| Associated Gas & Electric Properties (estimated) | [1] 1,125. 4 | 20 |
| Cities Service Co | 1,113. 2 | ---- |
| The North American Co. (estimated) | [1] 1,042. 6 | ---- |
| The United Gas Improvement Co | 812. 9 | ---- |
| American Power & Light Co | [1] 795. 9 | ---- |
| International Paper & Power Co | [1] 771. 2 | ---- |
| Public Service Corporation of New Jersey | 694. 0 | 20 |
| Electric Power & Light Corporation | [1] 651. 5 | ---- |
| Niagara Hudson Power Corporation | 648. 0 | 10 |
| Pacific Gas & Electric Co | 647. 3 | 10 |
| Standard Gas & Electric Co | [1] 637. 3 | ---- |
| Columbia Gas & Electric Corporation | 584. 7 | 13 |
| Interborough Rapid Transit Co | 554 8 | 16 |
| National Power & Light Co | [1] 546. 8 | ---- |
| The United Light & Power Co | 537. 2 | ---- |
| International Telephone & Telegraph Corporation | 489. 7 | 60 |
| American Gas & Electric Co | [1] 417 7 | 9 |
| Middle West Corporation (estimated) | [1] 400. 0 | ---- |
| American Water Works & Electric Co | 396 7 | 9 |
| Commonwealth Edison Co | [1] 376. 4 | 9 |
| Stone & Webster, Inc | 371 7 | ---- |
| Utilities Power & Light Corporation | 367. 2 | ---- |
| Southern California Edison Co , Ltd | 360. 2 | 4 |
| Western Union Telegraph Co | 341 6 | 47 |
| The Detroit Edison Co | 327 2 | 6 |
| Midland United Co. (estimated) | [1] 320 0 | ---- |
| Brooklyn-Manhattan Transit Corporation | 300 4 | ---- |
| Public Service Company of Northern Illinois | [1] 226 1 | ---- |
| Duke Power Co | 213 6 | ---- |
| The Peoples Gas Light & Coke Co | 211 4 | ---- |
| Pacific Lighting Corporation | 194 3 | 3 |
| The Edison Electric Illuminating Co. of Boston | 181. 8 | 7 |
| Federal Water Service Corporation | 176. 7 | ---- |
| Consolidated Gas Electric Light & Power Co. of Baltimore | 160. 1 | 5 |
| Central Public Utility Corporation | [1] 151 6 | ---- |
| Lone Star Gas Corporation | 134 4 | 4 |
| Long Island Lighting Co | 127. 6 | 2 |
| Hudson & Manhattan Railroad Co | 125. 5 | 2 |
| The Brooklyn Union Gas Co | 121 8 | 5 |
| Chicago Railways Co | 112 0 | ---- |
| Boston Elevated Railway Co | 110 6 | 6 |
| Third Avenue Railway Co. (estimated) | [1] 107 2 | 4 |
| Portland Electric Power Co | 95 0 | ---- |
| Community Water Service Co | 84. 5 | ---- |
| Jersey Central Power & Light Co | 80 1 | ---- |
| Associated Telephone Utilities Co | 79 4 | ---- |
| Philadelphia Rapid Transit Co | 73 0 | ---- |
| St. Louis Public Service Co | 72 8 | ---- |
| National Fuel Gas Co | 72 4 | ---- |
| The Baltimore Transit Co | 67 7 | ---- |
| Natural Gas Pipeline Co. of America | 67. 3 | ---- |
| RAILROADS | | |
| The Pennsylvania R. R. Co. (estimated) | [1] 2,863 0 | 109 |
| The New York Central R. R. Co (estimated) | [1] 2,356. 0 | 95 |
| Alleghany Corporation (estimated) | [1] 1,739 0 | ---- |
| Southern Pacific Co | 1,677. 7 | 37 |
| The Great Northern Ry. Co. (estimated) | [1] 1,152 1 | 16 |
| Northern Pacific Ry. Co. (estimated) | [1] 1,131. 2 | 17 |
| Baltimore & Ohio R. R. Co | 1,118 3 | 35 |
| The Atchison, Topeka & Santa Fe Ry. Co | 1,091 6 | 42 |
| Union Pacific R. R. Co | 1,069 6 | 30 |
| Atlantic Coast Line R. R. Co. (estimated) | [1] 786. 5 | 13 |
| Chicago, Milwaukee, St. Paul & Pacific R. R. Co | 699. 5 | 39 |
| The Illinois Central R. R. Co | 656. 8 | 29 |
| Missouri Pacific R. R. Co | 617. 3 | 23 |
| Chicago & Northwestern Ry. Co | 598. 2 | 25 |
| Southern Railway Co | 587 1 | 26 |
| The New York, New Haven, & Hartford R. R. Co | 535. 9 | 20 |
| Reading Co. (estimated) | [1] 495. 3 | 17 |
| Chicago, Rock Island & Pacific Ry. Co | 481 2 | 21 |
| Norfolk & Western Ry. Co | 467. 9 | 20 |
| St. Louis-San Francisco Railway Co | 417. 9 | 13 |
| Wabash Railway Co | 318 6 | 10 |
| Boston & Maine R. R. Co | 295 4 | 12 |
| Seaboard Air Line Ry. Co | 272 1 | 12 |
| Missouri-Kansas-Texas R. R. Co | 249. 6 | 8 |
| The Delaware & Hudson Co | 235. 8 | 17 |
| The Denver & Rio Grande Western R. R. Co | 233. 1 | 6 |
| Lehigh Valley Railroad Co | 217 0 | 13 |
| The Western Pacific R. R. Corporation (estimated) | [1] 196. 8 | 3 |
| The Delaware, Lackawanna & Western R. R Co | 176 4 | 15 |

TABLE II *Largest administrative units*—Continued

| | Assets, 1935 (millions of dollars) | Number employed, 1935 (thousands) |
|---|---|---|
| RAILROADS—continued | | |
| Western Maryland Ry. Co. | 168.1 | 4 |
| The Virginian Ry. Co. | 153.4 | 2 |
| Chicago Great Western R. R. Co. | 141.3 | 4 |
| Kansas City Southern Ry. Co. | 131.3 | 3 |
| Florida East Coast Ry. Co. | 123.2 | 2 |
| Chicago Union Station Co. | 91.4 | . |
| Chicago & Western Indiana R. R. Co. | 88.9 | . . . |
| Chicago & Eastern Illinois Ry. Co. | 80.2 | . . . |
| Terminal Railroad Association of St. Louis | [1] 77.0 | . |
| Minneapolis & St. Louis R. R. Co. | 72.0 | . . . . . |
| BANKS | | |
| Chase National Bank | 2,350.5 | . . . |
| National City Bank | 1,880.7 | . . . |
| Guaranty Trust Co. | 1,847.4 | . . . |
| Bank of America National Trust & Saving Association | 1,277.4 | 5.7 |
| Continental Illinois National Bank & Trust Co. | 1,141.1 | . . . |
| Bankers Trust Co. | 1,031.7 | . . . |
| First National Bank (Chicago) | 925.4 | . . . |
| Central Hanover Bank & Trust Co. | 914.8 | . . . |
| First National Bank (Boston) | 729.6 | . . . |
| Irving Trust Co. | 720.0 | . . . |
| Manufacturers Trust Co. | 673.0 | . . . |
| Chemical Bank & Trust Co. | 625.2 | . . . |
| Security First National Bank | 591.0 | . . . |
| First National Bank (New York) | 584.2 | . . . |
| Bank of the Manhattan Co. | 548.3 | . . . |
| J. P. Morgan & Company, Drexel & Co. | 537.9 | . . . |
| Philadelphia National Bank | 432.8 | . . . |
| New York Trust Co. | 419.7 | . . . |
| National Bank of Detroit | 395.9 | . . . |
| Cleveland Trust Co. | 337.7 | . . . |
| Mellon National Bank | 337.6 | . . . |
| Union Trust Co. | 334.5 | . . . |
| Northern Trust Co. | 320.7 | . . . |
| Corn Exchange Bank Trust Co. | 317.4 | . . . |
| American Trust Co. | 271.8 | . . . |
| Wells Fargo Bank & Trust Co. | 248.6 | . . . |
| First National Bank (St. Louis) | 235.5 | . . . |
| Pennsylvania Company for Insurances, etc. | 235.3 | . . . |
| Anglo-California National Bank | 214.3 | . . . |
| Harris Trust & Savings Bank | 207.6 | . . . |
| OTHER FINANCIALS | | |
| Metropolitan Life Insurance Co. | 4,234.8 | 48.5 |
| Prudential Insurance Co. | 3,129.5 | 38.6 |
| New York Life Insurance Co. | 2,243.6 | . . . |
| Equitable Life Insurance Society of the United States | 1,816.2 | . . . |
| Mutual Life Insurance Co. of New York | 1,239.0 | . . . |
| Northwestern Mutual Life Insurance Co. | 1,072.0 | 1.7 |
| Travelers Insurance Co. | 787.9 | . . . |
| John Hancock Mutual Life Insurance Co. | 731.5 | . . . |
| Penn Mutual Life Insurance Co. | 600.7 | 1.5 |
| Mutual Benefit Life Insurance Co. | 585.8 | 1.0 |
| Massachusetts Mutual Life Insurance | 532.2 | . . . |
| Aetna Life Insurance Co. | 503.5 | . . . |
| Marine Midland Corporation | 453.3 | . . . |
| New England Mutual Life Insurance Co. | 343.5 | . . |
| Union Central Life Insurance Co. | 326.8 | . . . |
| Provident Mutual Life Insurance | 298.3 | .5 |
| Commercial Investment Trust Corporation | 297.2 | 4.2 |
| Wisconsin Bankshares Corporation | 276.4 | 1.2 |
| Connecticut Mutual Life Insurance Co. | 268.1 | . . . |
| Pacific Mutual Life Insurance Co. | 215.6 | . . . |
| GOVERNMENT [2] | | |
| United States of America, excluding Post Office | | 790 |
| United States of America, Post Office | | 250 |
| City of New York (including counties) | | 127 |
| New York State | | 51 |
| Pennsylvania State | | 41 |
| Chicago | | 40 |
| Detroit | | 29 |
| Ohio State | | 23 |
| Philadelphia (city and county) | | 30 |
| Illinois State | | 21 |
| Massachusetts State | | 19 |
| California State | | 20 |
| Los Angeles City | | 26 |
| Los Angeles County | | 14 |
| Boston City | | 18 |
| Virginia State | | 14 |
| Baltimore (city and county) | | 14 |
| New Jersey State | | 11 |
| St. Louis (city and county) | | 13 |
| Cleveland | | 14 |

[1] Estimated on the basis indicated in table I, appendix 10.
[2] Source: See appendix 18, section 17.

An examination of the list will indicate the areas of economic activity in which administrative coordination is an important factor. Approximately half of the nonfinancial corporations are railroads or utilities. In 1935 the railroads in the list and their subsidiaries operated over 90 percent of the railroad mileage of the country.[5] In the same year the electric utilities on the list accounted for approximately 80 percent[6] of the electric power production in the United States as well as more than 90 percent of the telephone service, virtually the whole of the telegraph service and most of a large part of the rapid transit facilities of New York, Chicago, Philadelphia, Boston, and Baltimore. The remaining 107 corporations on the list of nonfinancial corporations include 84 corporations primarily manufacturing in character, 10 merchandising corporations, 9 primarily mining, and 4 providing other services or carrying on miscellaneous activities.

The manufacturing companies on the list comprise a much smaller proportion of all manufacturing assets and employment than do the railroads and utilities, though their importance varies greatly from industry to industry. In some industries like steel, petroleum refining, rubber and cigarette manufacturing, the large corporations listed above comprise most of the industry. In other industries, such as cotton textiles and the clothing industries, not a single corporation on the above list is primarily engaged in that industry, though often a large corporation may carry on subordinate activities in such an industry, just as certain of the larger automobile companies make cotton cloth for their own use.

## Industries Characterized by Large Corporations

Some impression of the industries in which the larger corporations constitute a significant proportion of the industry can be obtained by listing the 65 most important industries and indicating both the proportion of the industry's product supplied by the four largest companies, and the number of corporations listed among the 200 largest whose primary activity lies in the particular industry. Such a list is given in table III covering all the manufacturing industries employing over 25,000 persons. Except in the case of the large automobile corporations, which are treated as equally engaged in the automobile industry and the automobile body and parts industry, each of the large corporations has been classed for the purpose of the above list according to its primary activity. Of the 65 industries employing 25,000 persons or more, 24 are represented by at least one of the large companies on the list of 200 nonfinancial corporations. These industries include 67 of the 84 manufacturing corporations in the list, while the primary activity of 17 of the large manufacturing corporations fall in one or another of the industries employing less than 25,000 persons.

[5] Based on data in *Statistics of Railways of the United States, 1935*, Interstate Commerce Commission.
[6] Based on *Moody's Manuals*, "Utilities," 1935.

TABLE III.—*Manufacturing industries and the large corporations*

[The Larger Industries and the Number of the 200 Largest Nonfinancial Corporations Primarily Engaged in Each]

| Census industry | Number of largest 200 nonfinancial corporations primarily engaged in the industry | Percent of value of products by largest four producers in 1935 |
|---|---|---|
| Industries employing over 100,000 persons: | | |
| Steel-works and rolling-mill products | 10 | 49.3 |
| Meat packing, wholesale | 4 | 55.6 |
| Motor vehicles, not including motorcycles | 3 | 87.3 |
| Motor-vehicle bodies and motor-vehicle parts | 3 | 69.4 |
| Paper | 3 | 14.7 |
| Electrical machinery, apparatus, and supplies | 2 | 44.4 |
| Boots and shoes, other than rubber | 1 | 26.0 |
| Wool and hair manufactures | 1 | 24.2 |
| Printing and publishing, newspaper and periodical | 1 | 20.3 |
| Bread and other bakery products | 1 | 18.2 |
| Machinery n. e. c | 1 | 7.0 |
| Lumber and timber products, n. e. c | 1 | 4.7 |
| Railroad repair shops, steam | | 37.4 |
| Canned and dried fruits and vegetables, etc | | 22.7 |
| Cotton manufactures | | 8.4 |
| Men's cotton garments | | 7.5 |
| Furniture, including store and office fixtures | | 5.6 |
| Knit goods | | 5.3 |
| Men's, youths' and boys' clothing, n. e. c | | 5.1 |
| Printing and publishing, book, music and job | | 4.4 |
| Women's, misses and children's apparel, n. e. c | | 1.4 |
| Industries Employing 25,000 to 100,000 persons: | | |
| Petroleum refining | 17 | 38.2 |
| Rubber tires and inner tubes | 4 | 80.9 |
| Chemicals, n. e. c | 4 | 37.1 |
| Cigarettes | 3 | 89.7 |
| Tin cans and other tinware, n. e. c | 2 | 80.8 |
| Agricultural implements | 2 | 72.4 |
| Steam and hot-water heating apparatus, etc | 2 | 38.7 |
| Glass | 1 | 44.9 |
| Gas, manufactured | 1 | 37.6 |
| Radio apparatus and phonographs | 1 | 28.6 |
| Foundries | 1 | 25.2 |
| Drugs and medicines | 1 | 23.4 |
| Rayon and allied products | | 74.3 |
| Carpets and rugs | | 51.1 |
| Refrigerators, etc | | 46.1 |
| Ship and boat building, steel and wooden | | 44.8 |
| Cigars | | 38.5 |
| Nonferrous-metal alloys, and products | | 37.8 |
| Hardware, n. e. c | | 36.4 |
| Paints, pigments, and varnishes | | 32.3 |
| Engines, turbines, water wheels and windmills | | 30.7 |
| Flour and other grain mill products | | 29.4 |
| Structural and ornamental metalwork | | 24.5 |
| Wirework, n. e. c | | 23.1 |
| Pulp (wood and other fiber) | | 22.7 |
| Leather: Tanned, curried and finished | | 22.5 |
| Machine-tool accessories | | 21.8 |
| Ice, manufactured | | 20.7 |
| Clay products (other than pottery) | | 19.3 |
| Rubber goods, n.e. c | | 19.2 |
| Pottery, including porcelain ware | | 19.0 |
| Rayon manufactures | | 18.5 |
| Stoves and ranges (other than electric) | | 16.1 |
| Paper goods, n. e. c | | 14.2 |
| Boxes, paper, n. e. c | | 14.1 |
| Dyeing and finishing cotton, rayon and silk | | 13.9 |
| Boxes, wooden, except cigar boxes | | 13.9 |
| Machine tools | | 13.8 |
| Confectionery | | 12.5 |
| Stamped and pressed metal products | | 12.0 |
| Liquors, malt | | 11.8 |
| Silk manufactures | | 11.5 |
| Machine shop | | 8.7 |
| Planing-mill products | | 4.6 |

Source: Based on table II, appendix 7 and table I, appendix 10.

Such a compilation in no way reflects the secondary activities of the larger companies. The big railroad companies operate railroad repair shops, one of the meat packing companies plays a significant role in the canning of fruits and vegetables, and in a large number of other industries, such as rayon, rugs, refrigerators, and boat building, one or more of the large corporations plays a significant role, though the particular industry is not its primary field of activity. In many of the more important industries such as knit goods and clothing, none of the large corporations appear to play a significant role.

While the figures in table III give a clear indication of the importance of the big corporation in different industries, they do not give a clearly defined indication of the extent to which manufacturing as a whole is carried on by large enterprise. To obtain a more precise answer to this question, a special tabulation of 1935 census data has been compiled which brings together data on all the manufacuring activity of each of the largest manufacturing companies and their legally controlled subsidiaries.[7] In such a compilation the mining, service, trade, and other nonmanufacturing activities of the larger companies is excluded, so that the figures apply only to the strictly manufacturing activity of the larger companies. The results of this compilation are given below, indicating the role of the 100 largest manufacturing companies on the basis of different measures of size.[8]

With size measured by employment:

100 companies employed 20.7 percent of all the manpower engaged in manufacturing;

With size measured by value added by manufacture:

100 companies contributed 24.7 percent of all the value added in manufacturing activity;

With size measured by value of product:

100 companies accounted for 32.4 percent of the value of products reported by all manufacturing plants.

Thus, while a large proportion of the activity in particular manufacturing industries is carried on by very large corporations, the proportion of all manufacturing activity carried on by the very large companies is much smaller than in the railroad and utility fields. The fact that the big manufacturing corporations produce a larger proportion of the total value added by manufacturing than their proportion of the total manpower employed in manufacturing reflects to some extent the larger volume of capital per unit of manpower which they employ compared with the smaller companies. If comparable data were available on the value of the physical plant controlled by the hundred largest companies (size being measured on the basis of the value of physical plant) there is little question that the proportion of such assets held by them would be very much greater than the ratios of 20 percent of manufacturing manpower and 25 percent of value added by manufacture. Very probably, more than a third of the value of the manufacturing plant of the country is operated by the 100 largest manufacturing corporations even though they

[7] Corporations have been classed as subsidiaries where more than 50 percent of the voting power of its stock was held directly or indirectly by another corporation. See appendix 9.

[8] It should be noted that the three different methods of measuring size result in three different lists of the "largest" companies. Most of the companies on any one list are also on the other two, but not all of the smaller "large" companies.

employ only a fifth of the manpower engaged in manufacturing.[9]

When attention is turned to the field of mining, the same diversity of situation is apparent that exists in the field of manufacturing, though much less data are available to indicate the true role of the large administrative units. Large corporations listed above, or their subsidiaries, account for a large proportion of the iron ore and anthracite mined in the United States. They mine a significant part of the other nonferrous metals and extract much of the petroleum produced. But at the present time no real basis exists for determining the proportions of the nation's mineral resources controlled by the larger corporations or the proportion of the manpower engaged in mining which they employ.

In the field of wholesale and retail trade, the large mail-order houses, department stores, and retail chains play a significant though by no means a dominant role. Ten such companies are included in the list of 200 corporations, though together their sales appear to account for less than 8 percent of the total retail sales in the country.

In the field of services three large motion-picture companies play a significant role in that industry but, for the most part, the unregulated services are provided by medium or small enterprises.

The list of 50 largest financial corporations includes 30 banks, 17 life-insurance companies, and 3 investment trusts, each with assets of over 200 million dollars. The 30 banks together hold 34.3 percent of the banking assets of the country outside of the Federal Reserve banks while the 17 life-insurance companies account for over 81.5 percent of the assets of all life-insurance companies. The 3 investment trusts are important in their field. No general comparison between the size of these financial corporations and that of the nonfinancial corporations can be made because the financial companies act primarily as channels through which funds are invested and as a rule neither use a large volume of industrial assets in their operations nor employ a large number of persons. Most of their assets are loans or securities which only duplicate the assets of other corporations or borrowers. The significance of these large financial companies lies not so much in their productive activity as in the controls which they can exercise over economic policies, a subject to be discussed in a later chapter.

The final field to be considered is that of government. In this field large administrative units also play a significant role. The 20 largest governmental units together employ approximately 46 percent of all the manpower employed in government, including public education but excluding employees on work-relief programs.[10] The largest of these, the Federal Government, employs over a million persons in all its diverse activities, including the 284,000 in the post office, and 327,000 in the Army and Navy. It is by far the largest single administrative agency in the country, a single department, the post office, employing nearly as many persons in 1935 as the largest corporate employer. Some of the State and city governments rank high in size compared with corporate units. There are only a few corporations that employ more workers than the New York City government while State governments, New York, Pennsylvania and Ohio, and the city governments of Chicago, Philadelphia, Detroit, and Los Angeles rank along with the larger corporations in the list of 200.

#### The Fields of Small Enterprise

The analysis of the list of largest administrative units can disclose the types of activities in which large enterprise plays a significant role but can throw little light on the fields in which really small enterprise predominates. Of these, agriculture is by far the most important. In 1935 there were nearly 7 million farm units, less than 42,000 of which involved the gainful activity of more than 5 persons. The 7 million farm units each engaging the activities of only 1 to 5 persons accounted for well over half of the total number of producing units in the country and together they accounted for 97 percent of the persons engaged in agriculture.[11]

The other more important fields of really small enterprise are service, retail trade, and construction. While there are a few lines of service, such as the motion-picture field, in which large or medium enterprises predominate, and education, in which large government units often supply the service, most of the nonutility services are supplied by extremely small enterprises or individuals. In the field of retail trade, in spite of the encroachment of mail-order houses, large department stores, and chain stores, approximately 30 percent of all retail sales in 1935 were made by independent stores each having annual sales of under $30,000 and for the most part engaging the activities

[9] This conclusion is confirmed by results of the analysis of income-tax returns given in table V–A, appendix 11. This analysis indicates that in 1933, 75 corporations whose activity was primarily manufacturing controlled directly or through legally controlled subsidiaries (more than 50 percent voting control) approximately 45.5 percent of the land, buildings, and equipment (after depreciation) which was controlled by all corporations whose activity was primarily manufacturing. This figure requires two adjustments before it can throw light on the concentration of manufacturing assets since (1) all manufacturing is not carried on by corporations, and (2) the Treasury necessarily classifies all assets of a corporation which is *primarily* a manufacturing company as if *all* its activities were manufacturing. If the figure of 45.5 percent were adjusted for these two factors it would be reduced somewhat but would be most unlikely to fall below 35 percent.

[10] See table 1, appendix 15.

[11] See appendix 18, section 18

of only one or two people.[12] Similarly, a third of all the construction by private firms in 1935 was carried on by firms which performed less than $50,000 worth of work apiece.[13]

In other fields of activity there are many separate small units, but the number of persons engaged does not bulk large in relation to the whole national economy. Many small manufacturing or mining enterprises, small utilities, and small government units exist but do not carry on a significant proportion of the total activity in each of these fields, leaving them to be divided mostly between the medium and very large enterprises. Altogether, little more than a third of the nation's economic activity is carried on by producing units engaging the activity of one to five persons. An almost equal proportion was carried on by a few hundred very large administrative units.

**The 200 Largest Nonfinancial Corporations**

The greater part of the activity carried on by large administrative units is carried on by the large business corporations and their subsidiaries. In order to bring out more clearly the role of these large corporate units, a special tabulation of their balance sheets and of certain items from their income statements was made from income-tax returns. The precise procedure followed and the detailed results are given in appendix 11.

In such a tabulation, a major problem was presented by the subsidiaries of the large corporations. The Bureau of Internal Revenue has in recent years published figures in its *Statistics of Income* on the assets and incomes of corporations classified according to size. But in these compilations the subsidiaries of a corporation are treated as though they were independent companies, except when the parent held stock in the subsidiaries representing 95 percent or more of the total voting power, and even then the data on subsidiaries are included with the parent company only if the latter has chosen to file a consolidated balance sheet with the Bureau. The importance of this treatment of subsidiaries as independent companies can be indicated by a single piece of evidence. The published income-tax statistics indicate that in 1933 there were 375 nonfinancial corporations each reporting assets of over 50 million dollars. Yet, in the case of 102 of these companies, *Moody's Manuals* indicate that in 1933 they were subsidiaries of other corporations.[14] Thus, the 375 corporations each with assets over 50 million dollars turn out to be only 273 independent corporations and 102 of their subsidiaries. In addition to these large subsidiaries, the large corporations have many smaller subsidiaries which they control through majority voting power.

A clear statement of the assets controlled by larger corporations would require that each independent corporation should consolidate into its accounts the assets of all the corporations which it controlled, directly or indirectly through the ownership of stock representing more than 50 percent of the voting power.[15] It is not possible to make such a consolidation from the data filed with the Bureau of Internal Revenue, but some account of subsidiaries can be taken. In the compilations given in the appendix and summarized below, the aim was to obtain figures covering the 200 largest nonfinancial corporations and all of their legally controlled subsidiaries. To this end, each nonfinancial corporation reporting assets of 10 million dollars or more to the Bureau of Internal Revenue in 1933 was checked against *Moody's Manuals* to see if it was a subsidiary of one of the 200 largest independent corporations. Altogether 280 subsidiaries of the 200 largest nonfinancial corporations were found with assets over 10 million dollars. Compilation of the balance sheets and certain income statement items of these 280 subsidiaries and their 200 parents were then made. To the figures were added estimates of the assets and corresponding income statement items for the subsidiaries with assets under 10 million dollars to give estimates for the total assets and activity controlled by the 200 largest corporations. These resulting figures for total assets do not represent consolidated figures but involve a significant amount of duplication since they include both the assets of subsidiaries and the stock held by parents in subsidiaries as well as credit extended to them, just as do the asset figures for all corporations compiled and published by the Bureau of Internal Revenue.[16] Most of this duplication can be eliminated by deducting the item "taxable securities" from the summated assets of the 200 largest corporations and their subsidiaries thus providing a figure which can be compared with the total assets of all nonfinancial corporations less their taxable securities. Such a procedure not only eliminates the security holdings of parents in subsidiaries but also all the asset duplications due to intercorporate holdings of stocks and bonds. It does not, however, eliminate the duplication due to the intercorporate extension of short-time credit. A more basic figure which involves no duplication can be obtained by restricting the compilations to the value of physical assets recorded under

[12] Based on U. S. Department of Commerce, *Census of Business*, "Retail Distribution," vol. I, 1935.

[13] Based on U. S. Department of Commerce, *Census of Business*, "Construction Industry," vol. III, p. 30, 1935.

[14] Source: See appendix 11.

[15] Ownership by a subsidiary of part or all of the stock representing a majority of the voting power over another corporation is presumed to be included in the phrase "through ownership of stock," as well as stock owned directly by the parent corporation.

[16] It also includes duplication to the extent that subsidiaries held stock in their parents or extend credit to them, but this item is believed to involve an insignificant proportion of the total assets of the large corporations.

the items "inventories" and "land, buildings and equipment."[17] Such figures represent the tangible wealth controlled by the corporations and are directly comparable to estimates of industrial and national wealth. For some purposes the assets less taxable investments may be more significant, while for still other purposes the physical assets or only the land, buildings and equipment—the instruments of production are the more significant. Figures for each of these are given in table IV.

TABLE IV.—*Assets and income statement items for 200 largest nonfinancial corporations and their unconsolidated subsidiaries, 1933*

| | *Millions of dollars* |
|---|---|
| Assets | |
| Cash | 2,579 |
| Inventories | 3,867 |
| Land, buildings, and equipment[1] | 59,949 |
| Tax-exempt investments | 803 |
| Taxable investments | 17,754 |
| Notes and accounts receivable | 5,198 |
| Miscellaneous assets | 5,167 |
| Total assets | 95,617 |
| Total assets less taxable securities | 77,863 |
| Total physical assets[2] | 63,816 |
| Selected income statement items: | |
| Gross receipts from sales and services | 21,985 |
| Interest received | 361 |
| Cash dividends received | 415 |
| Cash dividends paid | 1,525 |
| Depreciation and depletion charged | 1,633 |
| Taxes paid | 1,013 |
| Interest paid | 1,628 |
| Compiled net profit or loss | 533 |
| Income derived from operations | 1,779 |

Source: See table II, part 2, appendix II.

[1] Less reserves for depreciation and depletion.

[2] Land, buildings, and equipment (depreciated) and inventory.

NOTE.—Size is measured throughout by amount of gross assets.

The absolute figures for the assets and income items of the 200 largest nonfinancial corporations and their subsidiaries are in themselves significant, as they show the great volume of assets controlled by the relatively small group of corporations. That 200 corporations control over 60 billion dollars worth of physical assets is in itself a striking fact. The real significance of these figures, however, lies in the basis they give for comparing the assets of the large corporations with other asset and wealth items.

The three most important items with which the assets of the 200 largest corporations could be compared are: (1) the assets of all nonfinancial corporations, (2) the total industrial wealth of the nation, and (3) the total national wealth. The figures for all nonfinancial corporations can be derived directly from the income tax statements, the same source as that for the figures on the 200 largest corporations and their subsidiaries, and are directly comparable with them. For national wealth a very crude estimate of the value of all physical wealth of the country other than personal belongings has been made which gives figures comparable with the figure for land, building, equipment, and inventory held by the largest corporations.

Figures for total industrial wealth have been obtained by summating estimates of the wealth (land, buildings, equipment, and inventory) used by the railroads and other public utilities, by manufacturing and mining enterprises, by wholesale and retail enterprises, by the construction industry, by finance companies exclusive of their holdings of farm and residential real estate, and by the service industries exclusive of public education. The resulting figures for industrial wealth represent the national wealth less agricultural wealth, governmental wealth, and residential housing which together make up more than half of the national total. Presumably some of the wealth used in the service industries should be excluded from the total of industrial wealth, but no adequate basis was found for making such a deduction, so that if anything, the figures for industrial wealth are slightly exaggerated. The figures arrived at for these different categories of assets and wealth (in 1933) are given in table V along with the proportion of each category which is controlled by the 200 largest corporations.[18] Together these 200 largest corporations controlled in 1933 approximately 19 to 21 percent of the national wealth, between 46 and 51 percent of the Nation's industrial wealth, and approximately 60 percent of the physical assets of all nonfinancial corporations.

A break-down of large corporations into major industrial categories is given in table VI. It shows, as has already been indicated, that the bulk of transportation and of other public utility assets is in the hands of the very large corporations and that over 45 percent of the land, buildings, and equipment (depreciated) of manufacturing corporations was held by the 75 largest manufacturing corporations. Since approximately 92 percent of the manufacturing is carried on by corporations, these 75 corporations must have held in the vicinity of 40 percent of the total plant used in manufacturing.[19] The 25 largest nonfinancial corporations not classed by the Bureau of Internal Revenue as transportation, public utility, or manufacturing represent only 17 percent of the land, buildings, and equip-

[17] Depreciated.

[18] It should be noted that throughout this section, the figures given are not concerned with the assets *owned* by large corporations but with the assets *controlled*. "Assets controlled" includes both the assets owned by a corporation and the assets owned by its subsidiaries. A corporation has been treated as a subsidiary when a majority of the voting power of its stock is held directly or through subsidiaries by another corporation. Where only working control of a corporation (a large minority interest) is held by another corporation the former has not been treated as a subsidiary of the latter.

[19] An exact figure cannot be given because some of the assets of corporations properly classed as manufacturing corporations are concerned with other activities than manufacturing.

TABLE V.—*Relation of 200 largest nonfinancial corporations to all nonfinancial corporations, to industrial wealth, and to national wealth, 1933*

| | 200 largest nonfinancial corporations and subsidiaries | All nonfinancial corporations | Total industrial wealth | Total national wealth | Percent of each category controlled by 200 largest corporations | | |
|---|---|---|---|---|---|---|---|
| | | | | | All nonfinancial corporations | Industrial wealth | National wealth |
| | *Billions of dollars* | *Billions of dollars* | *Billions of dollars* | *Billions of dollars* | | | |
| Total assets, involves some duplication | 95.6 | 167.7 | ..... | ..... | 57.0 | ..... | ..... |
| Total assets less taxable securities, involves only minor duplication | 77.9 | 142.0 | ..... | ..... | 54.8 | ..... | ..... |
| Total physical assets, land, buildings, equipment, and inventories, involves no duplication | 63.8 | 107.0 | [1] 125–140 | [2] 300–340 | 59.6 | 46–51 | 19–21 |
| Total instruments of production, land, buildings, and equipment, involves no duplication | 59.9 | 93.4 | ..... | ..... | 64.2 | ..... | ..... |
| Gross receipts from sales and services | 22.0 | 73.4 | ..... | ..... | 29.9 | ..... | ..... |
| Interest and dividends paid | 3.2 | 5.0 | ..... | ..... | 64.0 | ..... | ..... |
| Compiled net profits | .5 | .1 | ..... | ..... | ..... | ..... | ..... |

Source: See appendix 11, table II.

[1] Represents a summation of the wealth used by railroads and other public utilities, by manufacturing and mining enterprises, by wholesale and retail enterprises, by the construction industry, by finance companies exclusive of their holdings of farm and residential real estate, and by service industries exclusive of public education; this is equivalent to total national wealth less agricultural wealth, governmental wealth, and residential housing. Presumably part of the wealth used in the service industries should be excluded from an estimate of industrial wealth but no satisfactory basis for estimating the amount to be excluded could be found. The estimate for the total industrial wealth is likely to err on the side of being too large. See Appendix 18, section 5; the figures are for 1935, and it is assumed that the range would be the same for 1933.

[2] See appendix 18, section 5. Excludes value of personal property; the figures are for 1935, and it is assumed that the range would be the same for 1933.

ment (depreciated) used in these other activities which include mining, trade, construction, and services.

**Growth in the Relative Importance of the Large Corporations**

The relative importance of large corporate units in the American economy appears to have been fairly steadily increasing as a part of the process of shifting from an economy primarily agricultural in character to one predominantly industrial. As recently as 1870, 53.0 [20] percent of the persons gainfully occupied were engaged in agriculture. In 1930 only 21.4 [20] percent were engaged in agriculture. Broadly speaking, industry—consisting primarily of transportation and the public utilities, mining and manufacturing, and wholesale and retail distribution—has in the last century displaced agriculture as the dominant characteristic of the American economy. With this industrialization an increasing proportion of the whole economy has come to be carried on by corporations while large corporations have come to play an increasing role both in relation to all corporations and in relation to the national economy. No figures are available on the increasing importance of corporations in the whole economy, but the increasing role of large corporations can be indicated.

The changing importance of large corporations to all nonfinancial corporations between 1929 and 1933 is shown in table VII. The figures for the 200 largest corporations in 1929 were derived from income tax returns by essentially the same procedure as that already indicated for 1933, while the intervening years were estimated by methods set forth in appendix 11.[21] For earlier years no such reliable figures exist, but the estimates made by Berle and Means appear to be sufficiently reliable to indicate roughly the magnitude of the change in the relative importance of the larger corporations in relation to all nonfinancial corporations.[22] The figures become successively less reliable as one goes back to the earlier years. The composition of the list of 200 largest in each year changes from year to year as particular corporations decline in relative importance and others take their places, but the turnover is relatively slow. The proportionate holdings

[20] U. S. Department of Commerce, *Census of Population, 1930*, vol. IV.

TABLE VI.—*Concentration in 4 industrial categories, 1933* [1]

| Proportion of corporate assets in 4 industrial categories controlled by largest corporations in these categories | 1933 | |
|---|---|---|
| | Total assets less taxable investments (less depreciation) | Land, buildings, and equipment (less depreciation) |
| | *Percent* | *Percent* |
| 75 largest manufacturing corporations | 40.2 | 45.5 |
| 45 largest transportation corporations | 91.7 | 91.6 |
| 40 largest public utility corporations | 80.4 | 81.2 |
| 25 largest "other" nonfinancial corporations | 14.8 | 17.4 |

[1] For derivation of this table, see appendix 11.

[21] It should be noted that since the figures represent the 200 largest nonfinancial corporations respectively in each successive year, they do not concern a group of corporations which is identical in successive years, but one which changes gradually as particular corporations decline in importance and others take their place among the 200 largest.

[22] *The Modern Corporation and Private Property*, MacMillan Co., 1933. The authors concluded that in 1929, 49.2 percent of the assets of all nonfinancial corporations exclusive of intercorporate security holdings were owned by 200 corporations and their subsidiaries but indicated the crudeness of this estimate by suggesting that the true figures probably lay between 45 and 53 percent. The more exact ratio arrived at on the basis of the income tax returns of the largest corporations and their large subsidiaries indicated that 47.9 percent of the assets exclusive of taxable securities of all nonfinancial corporations were held by 200 corporations or their subsidiaries. The two figures are not exactly comparable because the Berle and Means estimates exclude short-term intercorporate loans as well as taxable securities. However, the closeness of the ratio indicates the approximate accuracy of the Berle and Means figure. Their estimates for the years 1926–29 are arrived at on the same basis and are presumably of the same order of approximate accuracy. The estimates in prior years are recognized as being relatively crude. Because the larger corporations on the whole "watered" their stock to a greater extent than smaller corporations, the Berle and Means figures tend to minimize the growth in the relative importance of the larger corporations.

of the largest corporations increased from approximately one-third of the assets (exclusive of intercorporate securities) of all nonfinancial corporations in 1909 to over 54 percent in 1933.[23] Since there is no reason to believe that a smaller proportion of economic activity was carried on in 1933 by corporations than in 1909, the figures would seem to indicate an increasing proportion of all activity carried on by the 200 nonfinancial corporations which were largest in the successive years. This evidence of corporate growth serves to emphasize the increased role of large administrative units in determining the use which is made of national resources.

It would be highly desirable to have comparable figures on the changing role of large government units, particularly that of the Federal government. Relatively few precise data on this score are available. If adequate estimates could be made as to the proportion of the country's wealth which was owned by the Federal government or its agencies and the proportion of the gainfully employed who were in government service, they would undoubtedly show similar general growth in the relative importance of government, temporarily accelerated by periods of war or other national emergency. That the proportionate role in the national economy of the large administrative units, including both corporate and government, has greatly increased in the last 50 years there can be little doubt. The alteration in the structure of the American economy resulting from the increased importance of administrative coordination will become apparent in subsequent chapters.

TABLE VII.—*Proportion of assets of all nonfinancial corporations held by 200 largest nonfinancial corporations, 1929–33*

[Money figures in millions of dollars]

| | 1929 | 1930 | 1931 | 1932 | 1933 |
|---|---|---|---|---|---|
| TOTAL ASSETS [1] | | | | | |
| 200 largest nonfinancial corporations | 98,597 | 107,073 | 101,662 | 96,690 | 95,617 |
| All other nonfinancial corporations | 100,832 | 91,258 | 76,766 | 77,560 | 72,104 |
| Total nonfinancial corporations | 199,429 | 198,331 | 178,428 | 174,250 | 167,721 |
| Concentration ratio: 200 largest to all nonfinancial corporations (percent) | 49.4 | 54.0 | 57.0 | 55.5 | 57.0 |
| TOTAL ASSETS LESS TAXABLE INVESTMENTS [2] | | | | | |
| 200 largest nonfinancial corporations | 84,809 | 91,364 | 85,169 | 79,916 | 77,863 |
| All other nonfinancial corporations | 92,195 | 76,846 | 68,175 | 65,973 | 64,125 |
| Total nonfinancial corporations | 177,004 | 168,210 | 153,344 | 145,889 | 141,988 |
| Concentration ratio: 200 largest to all nonfinancial corporations (percent) | 47.9 | 54.3 | 55.5 | 54.8 | 54.8 |
| LAND, BUILDINGS, AND EQUIPMENT LESS DEPRECIATION AND INVENTORIES | | | | | |
| 200 largest nonfinancial corporations | 63,954 | [3] | [3] | [3] | 63,816 |
| All other nonfinancial corporations | 57,989 | | | | 43,168 |
| Total nonfinancial corporations | 121,943 | | | | 106,984 |
| Concentration ratio: 200 largest to all nonfinancial corporations (percent) | 52.4 | | | | 59.7 |
| LAND, BUILDINGS, AND EQUIPMENT LESS DEPRECIATION [4] | | | | | |
| 200 largest nonfinancial corporations | 58,351 | 62,709 | 62,658 | 60,540 | 59,949 |
| All other nonfinancial corporations | 42,278 | 41,628 | 36,368 | 35,404 | 33,407 |
| Total nonfinancial corporations | 100,629 | 104,337 | 99,026 | 95,944 | 93,356 |
| Concentration ratio: 200 largest to all nonfinancial corporations (percent) | 58.0 | 60.1 | 63.3 | 63.1 | 64.2 |

Source: For the method used, see appendix 11

[1] Involves intercorporate duplication.
[2] Slight intercorporate duplication.
[3] Inventories not available for 1930–32 because of inadequate data for interpolation.
[4] No intercorporate duplication.

### Determinants of Size of Enterprise

The prevalence of very large administrative units in some segments of the economy and their absence in others raises the question of the forces making for size. Why are some activities dominated by large units and others by small? This is a question that deserves intensive research, both in its technical aspects and its social implications. Here the most that can be done is to indicate certain elements of the problem.

One aspect of the problem of size of administrative unit has to do with the economical size of plant. It is generally agreed that in any concrete situation there is an appropriate size of plant such that a much larger plant would be uneconomically large, and a smaller plant would be uneconomically small. The appropriate size of plant for supplying a particular product will depend on a wide variety of circumstances of which the most important are usually the techniques of production, the techniques of administration, and the size of the available supply of raw materials and labor, and the size of the available market for the product. The appropriate size is likely to become larger or smaller with improvements in technique or administration, or with changes in the market. But whatever its size, whether a mammoth rolling mill, standard medium-sized cotton mill, a corner drug store, or a 160-acre farm, it is likely to set a minimum limit to the size of the appropriate administrative unit.[24]

In the case of most of the very large enterprises, however, the administrative unit is not limited to a single plant. Instead, it is likely to embrace a number of plants, perhaps hundreds or even thousands. The General Motors Corporation, The Great Atlantic & Pacific Tea Co., and The National Dairy Corporation are examples of companies operating many separate plants scattered over the entire country. There is much less agreement as to the efficiences of multiplant administrative units. It is claimed by some that all, or pratically all, the technical efficiencies of large scale operations are obtained in the large single plants. Others claim that there are in many instances technical efficiencies as well as operational economies in multiplant operation. It is quite possible that just as there

[23] Changes in the method of reporting to the Bureau of Internal Revenue prevented the carrying of the compilation and estimating beyond 1933 with the small staff of technicians available.

[24] It is, of course, possible to have several quasi-independent administrative units operating the same plant. Thus, a separate department in a department store is sometimes rented to an enterprise which is independent of other departments, or a steel company may contract out the operating of particular blast furnaces. But this is exceptional.

is presumed to be an optimum size of plant, there may be an optimum size of administrative unit, sometimes involving only a single plant and sometimes embracing a multitude of plants. Just what are the factors making for the optimum administrative unit is likewise a question deserving intensive study.

Until the forces making for large as against small enterprises have been intensively studied it will not be possible to say how much the concentration into large administrative units is a product of technical considerations, how much it is a product of the drive to reduce or eliminate market controls, and how far it results from other considerations such as the ability to raise capital or the requirements of mass marketing. For the present discussion of the structure of the American economy, the first consideration is to recognize the extent and scope of administrative coordination in the use of resources. Until the extensive role played by administration in the organization of economic activity is fully recognized, there is danger of overestimating the extent to which coordination is brought about through the market mechanism

**Extent of Market Coordination**

While administration plays the role of coordinating the activities of individuals within economic units, the market functions to coordinate the activities between economic units. As has been noted, it is not the sole influence coordinating the activities of separate economic units, but operates within the framework established by canalizing rules, in conjunction with the greater or less influence of accepted goals, and supplemented by threads of administrative control running between economic units. In conjunction with these other influences, the market interrelates the millions of families and individuals who constitute the ultimate consuming units, the millions of gainfully occupied who constitute the ultimate producers, the millions of investors who in part finance the formation of capital, and the millions of producing units, some large and some small, within which production is carried on.

**Characteristics of Market Coordination**

The market contributes to economic organization through two quite different characteristics, money transactions and flexibility of price. Both these characteristics are thoroughly familiar but are so often confused that their difference needs to be emphasized here.

*Coordination through money transactions.*—In the preceding chapter the circuit flows of money have already been discussed. These circuit flows are made up of a series of money transactions which facilitate the organized use of resources. Through these money transactions, manpower and capital funds are made available to producers; raw materials, semifinished products, and capital goods are transferred from one producer to another, and finished products or services are made available to consumers. These money transactions also provide a system of prices which are stated in terms of a common money medium and which act as a guide to the use of resources, stimulating some uses and repressing others. The organizing role of money transactions is too familiar to justify discussion here.

What is less often recognized is that money transactions can perform at least part of their organizing role regardless of whether prices are flexible or rigid. In the middle ages under the guild system, prices for most guild products were extremely inflexible, some remaining constant for a century at a time. Yet if all prices could be made perfectly rigid for years at a time, this would not prevent money transactions at these rigid prices from playing a role in the organizing of resources. Even if the system of rigid prices bore no close relation to a set of prices which would correspond to effective use of resources, both production and consumption could be expected to adjust to the particular prices. Where the particular prices were too high in relation to a balanced use of resources, consumption would presumably be lower than would be warranted by the available resources, while competition to supply this limited market at a high price might lead to such a large number of producers operating at partial capacity that costs of production would be increased to the point that no one producer was making more than a competitive profit. Gasoline distribution suggests a case of this type of competition which acts to increase costs instead of reducing distribution margins. Conversely, a price too low in relation to effective use of resources might result in insufficient production to supply the demand at the particular price. The deficiency of supply might lead to rationing, or perhaps the extra demand might be discouraged by the necessity of waiting in queues for the chance to buy, as happened on a large scale in Russia in the 1920's.

But neither in the case of too high nor too low prices would the perfect rigidity of prices prevent money transactions from contributing to a major extent to the organizing of economic activity. The market would be playing the same role between enterprises that administration plays within enterprises, directing manpower and materials into different channels and helping transfer materials from one step in production to another. Likewise, it would allocate the products of activity between consuming units, performing the same function that the head of a family performs in apportioning products among the family members. How well it would perform these functions would depend very largely on the price relationships actually existing. One pattern of prices might lead to ineffective or only partially effective use of resources, just as incompetent

management within an administrative unit can lead to wasteful use of resources while another set of prices might lead to more effective use. Thus, whether prices are inflexible or more or less flexible, the market mechanism contributes to the organization of economic activity through money transactions.

*Coordination through price flexibility.*—In addition to money transactions, the market can contribute to the organization of production through price flexibility. This can arise in two ways, first, by price adjustments which alter price relationships in such a way as to make them conform more nearly with price relationships conducive to effective use of resources, and second, by price adjustments which insure an adequate supply of buying power. Both of these will be discussed in detail in the next chapter in connection with the price structure. It is sufficient here to mention them before examining certain types of price formation and the character of the market in different parts of the American economy.

There are two main processes by which prices are arrived at.[25] Prices may be made in the free market as the result of the interaction of a very large number of buyers and sellers or, in a more restricted market prices may be made by administrative decisions influenced to a greater or less extent by market conditions.[26] The price of wheat in the Chicago Wheat Pit and the price of steel shares on the New York Stock Exchange are examples of prices made in a free market. Such prices will be referred to hereafter as market prices. The wholesale prices of automobiles and agricultural implements are set by the respective manufacturers and these result from administrative decision. Such prices will be referred to as administered prices.

The chief differentiating characteristic of market and administered prices lies in the relation between the prices at which successive transactions are likely to take place. In a free market there is nothing tending to make successive transactions in a particular commodity take place at identical prices. Occasionally there may be a run of identical prices for hundred-share lots of steel stock but it is highly unlikely that all round-lot transactions in steel stock would take place at the same price for several days at a time.[27] On the other hand, it is the nature of an administered price that it is set for periods of time, and a series of successive transactions take place at that price. Thousands of automobiles of a given make and model may be sold through a period of months at identical wholesale prices and only occasionally will the administered price be altered to meet changes in market conditions, changes in model, or an alteration in costs. Thus, it is the nature of free-market prices to be highly flexible, responding quickly to the short-run ebb and flow of demand and supply, whereas administered prices tend to lack the very short run flexibility of market prices.

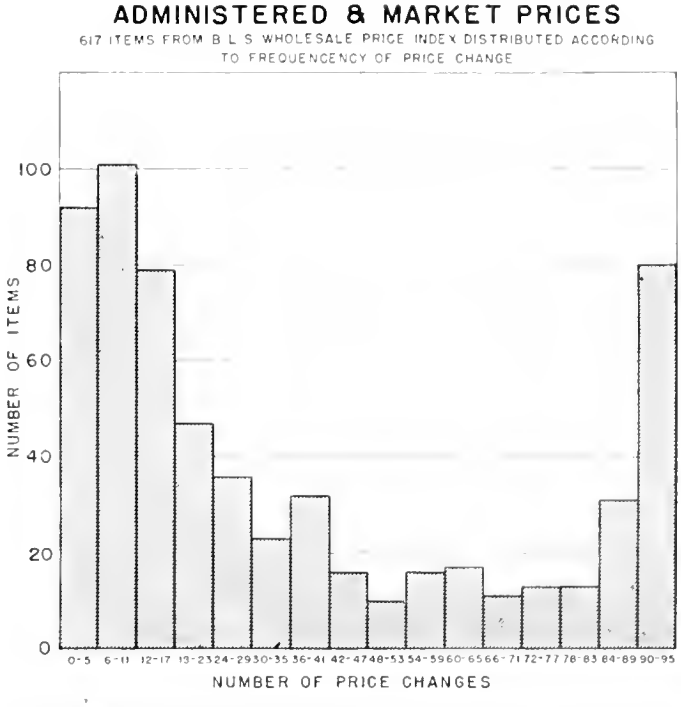
Theoretically, an administered price could be so frequently altered, hourly or daily, as to approximate the flexibility of a market price, but in practice administered prices tend to be less flexible, varying from the relatively flexible to the highly inflexible. This is brought out clearly in chart 1 which shows the items underlying the Bureau of Labor Statistics wholesale price index distributed according to the frequency with which their prices changed in successive months between 1926 and 1932. Some items showed a difference in price in every month over the preceding month, thus changing 95 times in the 96 monthly observations. Other items were the same in price throughout the

[25] There are many other ways by which prices are arrived at. Prices, particularly fees for services, are often customary. They may be arrived at on a basis of auction. Other pricing processes have sometimes developed. However, market prices and administered prices are the most important in the American economy at the present time.

[26] The term "free market" is used here in general to refer to a market in which no one producer or organized group can influence price through expansion or contraction of its production to an extent sufficient to justify it in giving weight to this influence in developing its production policy and in which no one consumer (ultimate or intermediate) can influence price through expanding or contracting its consumption to an extent sufficient to justify it in giving weight to this influence in developing its consumption policies. Stated in technical terms, a free market would be one in which each individual producer was faced with a virtually horizontal demand curve for its product and each individual consumer was faced with a virtually horizontal supply curve. Other economic conditions are also necessary to the existence of a free market such as the absence of government restriction on prices and the absence of temporary speculative control of prices such as is involved in a corner on wheat or an effective stock pool.

[27] Except, of course, if the market were being rigged. In that case it could not be classed as a free market

CHART 1




Source: Based on data given in appendix 2, table 1.

period, thus having zero price changes. On the whole the items tend to fall fairly close to one end or the other of the frequency scale. Of the 617 items covered, 111, or 18 percent, changed 84 times or more, while 193, or 31 percent, changed less than 12 times. This bunching at the extremes gives the distribution shown in the chart a more or less U-shaped character which is usually associated with two distinct types of behaviour. For convenience the prices which changed more than 77 times in the 8-year period will be referred to as market-dominated prices, although in the case of several there were short periods when the prices took on the character of an administered price, while there are others which would show themselves to be administered prices if weekly or daily price data were employed. In these cases, even though the prices were administered, the market appeared to dominate the price behaviour. Similarly, prices which averaged less than 23 changes a year will be referred to as administration-dominated prices since their infrequency of price change indicates an appreciable degree of price control in the hands of individual producers. These two groups of prices include 71 percent of the items represented by the chart. The remaining 180 items which showed between 23 and 78 changes are not clearly dominated by either the market or administration. In the next chapter, which deals with the price structure, the difference in the behavior of these groups will be examined.

It is generally recognized that a producing unit acting alone can operate on the basis of administered prices only where it supplies a significant proportion of all the particular market or can narrow down the scope of the market by emphasis on special brands, trade names, and similar devices for differentiating the product of one producer from that of another in the minds of buyers. When the independent producer is so small in relation to the market that he can sell all that he can produce without having a significant effect on prices,[28] then he cannot administer the price of his product. If all the producers supplying a particular product are in this situation, the price is made in the market and cannot be administered by the producers except through collusion on the part of the producers or the interposition of some higher authority.[29] Only where the producer is large in relation to the market can he administer the prices of his product.

The size of a single producer in relation to the market should not be confused with the absolute size of producing units for which data were given in the preceding section. The possible market for the products of a single producer may be Nation-wide or even world-wide as in the case of wheat and automobiles. The market may be only regional as in the case of cement. It may be local as in the case of bread baking and ice manufacture or extremely local as in the case of the retailing of food where even a few city blocks may be sufficient to delimit for a particular store the circle of its possible customers. This means that the importance of a particular producer in relation to the market must be measured in terms of the proportion of the market which he supplies. The single grocery store in an isolated country town is in a position to dominate the local market. Except for locally grown food products, it must supply the bulk of the community's food. The grocer is in a position to administer his own prices. On the other hand a huge company employing thousands of workers in producing standard cotton goods would be producing a product which has a world market. Such a company would be likely to be supplying only a very significant proportion of the total and would not be in a position to dominate the market even to the extent of administering its own prices.

The markets for particular products or services are seldom sharply defined. Geographically, the market which can be reached from a particular plant is likely to taper off gradually with distance, as transportation costs become greater, or delay in delivery becomes more important. In terms of function, also, products do not fall into sharply defined categories with separate and distinct markets. If products are defined narrowly, the markets for particular products are largely overlapping. Perhaps the market for 36-inch cotton sheeting of a particular quality might be discussed as a definite thing, but actually the market for 36-inch sheeting overlaps that for 54-inch sheeting of the same quality. For many uses one could be substituted for the other. Yet, for some uses they are not adequate substitutes for each other so that their markets are not exactly coterminous. Similarly, sheeting of the same width but of different quality or construction may be interchangeable with each other for some purposes and sufficiently different for other purposes to be inadequate substitutes. The same difficulty arises when markets for broader categories are discussed. Cotton sheeting as a whole overlaps with linen sheeting for some purposes, with silk and rayon sheeting for some purposes, with sheet rubber for still other purposes. Thus, the market which any particular producer is supplying is not a sharply determined market but one that ramifies in different directions with no precise geographical or functional limits.

#### Concentration in Relation to Major Markets

Though markets cannot be sharply delineated, it is possible to obtain a rough indication of the degree of concentration in relation to the market by adopting the industrial or other categories generally employed

[28] I. e., when he, as an independent producer, faces a horizontal demand curve for his product within the range of his capacity to produce.

[29] Prices administered by consuming units are sufficiently infrequent to be disregarded in outlining the structure of the national economy.

and measuring concentration in these terms.[30] This is done in the following sections which take up successively the degree of concentration in each of the major markets—goods, labor, and securities. The results of such measurement can, of course, give only a crude approximation to market concentration, but such a crude picture is of value in outlining the general structure of the American economy.

*Concentration in relation to the market for goods.*—In the market for goods, including both commodities and services, the vast bulk of consumers are unorganized so that there is little concentration on the part of the ultimate buyers of consumer goods. For particular types of consumer goods the effective demand may be limited to a relatively small number of ultimate buyers, and in particular localities consumers may have developed effective cooperatives or collective bargaining associations for particular commodities, but for the bulk of consumers goods the number of potential buyers tends to be large, often ranging into the millions so far as particular producers are concerned.

In contrast to lack of concentration among consumers, a great deal of concentration in relation to the market is evident among producers. For commodity after commodity produced for consumption, the number of separate producers is small so there are only a small number of sellers in relation to the large number of ultimate buyers. Likewise, for many services rendered to consumers, the number of enterprises in a position to supply the particular service is small. This same concentration of production in some fields leads to conditions in which the intermediate buying is concentrated and the selling is unconcentrated. This is particularly true in the case of farm products. Farmers sell the bulk of their cigarette tobacco to a handful of cigarette manufacturers who in turn sell the finished cigarettes to millions of consumers through the retail channels. The bulk of cattle and hogs is sold to a few meat packers, and a major part of the wheat used in this country is sold to a few flour milling companies. In other cases, the concentration of producers leads to concentration of both buying and selling, as when a few steel producers supply most of the heavy steel rails and the bulk of the purchases is made by a small number of railroads. It is primarily the concentration of production in many lines of activity that provides the small number of sellers or buyers which characterize the market for so many goods and limit the operations of the market as an organizing influence. This section will therefore be concerned only with concentration in relation to the market as it is reflected in the concentration of production.

Government-operated enterprise and the regulated public utilities probably constitute the area of greatest concentration in relation to the market. In the case of the bulk of the services rendered by government units for which specific charges are made, such as postal services, water supply, and other utility services, the government unit is the only agency supplying the particular service to the particular market. Likewise in the supplying of electric power, gas, and local telephone service, relatively few communities are served by more than one utility company supplying each of these services. Local transport is usually supplied by one or a few traction or bus companies and many small taxi units. The railroad transportation service between particular points is usually restricted to one or a very few railroads, though truck and bus service has cut into the market for certain types of transport service. Long-distance communication, other than that through the mails, is mostly divided between the telephone company and two telegraph systems. Thus, in supplying services in most of the government and utility fields, there is a high degree of concentration in relation to the market, and prices are administratively determined either by government or through a regulatory process which involves both government and private business. Only to a negligible extent are the services rendered by government or the utilities supplied in a free market and at prices determined in the market.

In the field of manufactures, concentration in relation to the market runs all the way from a high degree of concentration in the supplying of automobiles, cigarettes, and agricultural implements to the relatively small concentration in the production of cotton textiles, knit goods, and clothing. This variety is shown in chart II, which indicates for each census industry the proportion of the industry's product, measured in value terms, which was produced by the largest four and the largest eight producers in the industry in 1935. The different industries are divided into three groups: First, the 21 big industries, each of which employed 100,000 persons or more in 1935; next, the 44 medium-sized industries, each employing between 25,000 and 100,000 persons in 1935; and, finally, the 211 smaller industries, each of which employed less than 25,000 persons. Within each group the industries are arranged in order of declining concentration as measured by the relative value of the products of the four largest producers.

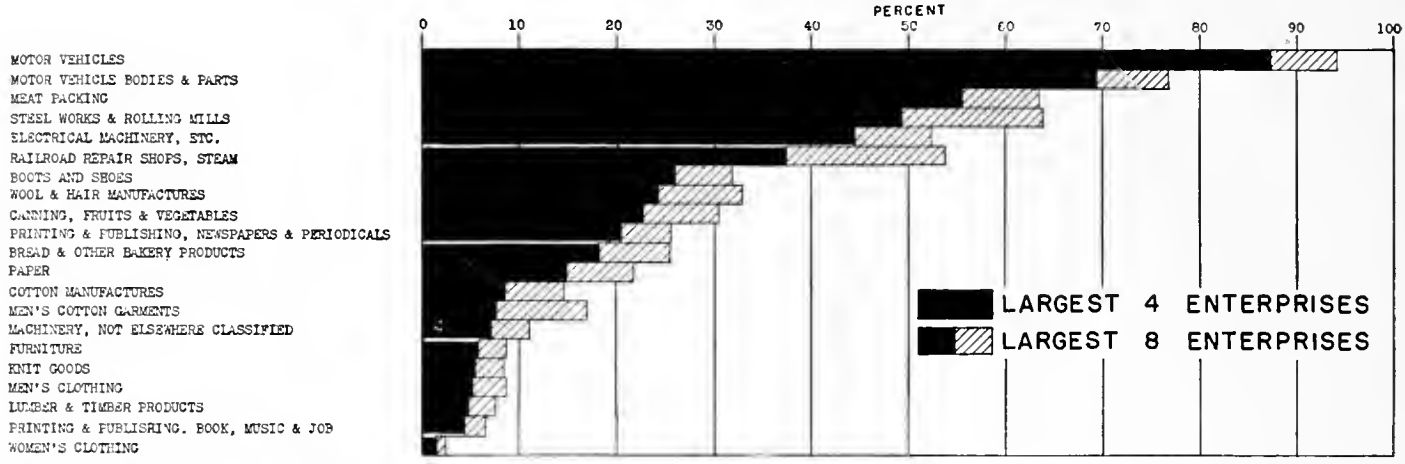
In reading this chart it is important to keep in mind three weaknesses, each of which tends to minimize the actual degree of concentration in relation to the market. First, the Census in grouping individual plants

[30] The term "concentration in relation to the market" is used throughout this chapter to refer to concentration in buying or selling, i. e., a large proportion of the sales of a particular goods made by a small number of sellers or purchased by a small number of buyers.

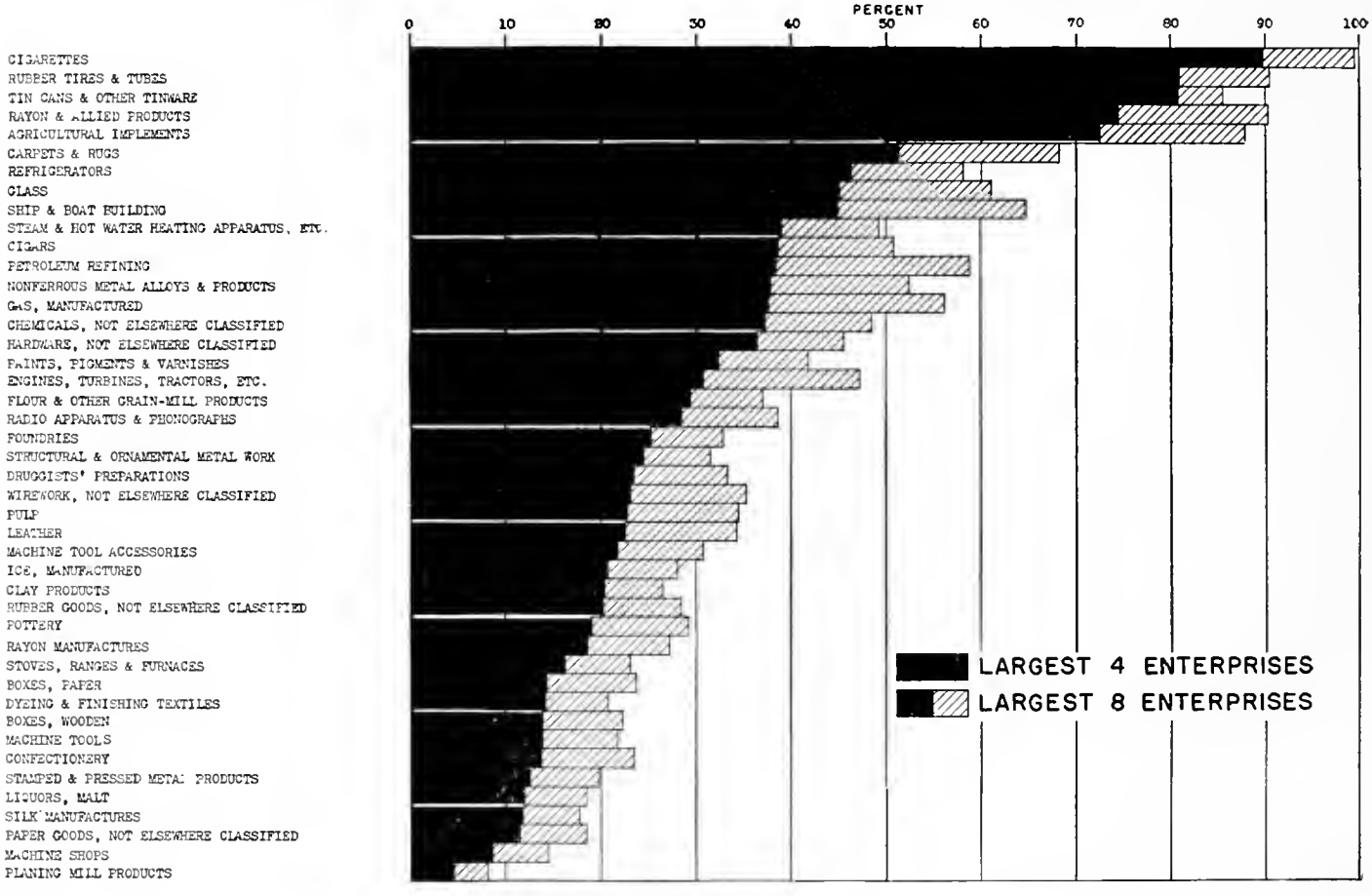
CHART II

# CONCENTRATION, MEASURED BY VALUE OF PRODUCTS, IN MANUFACTURING INDUSTRIES 1935

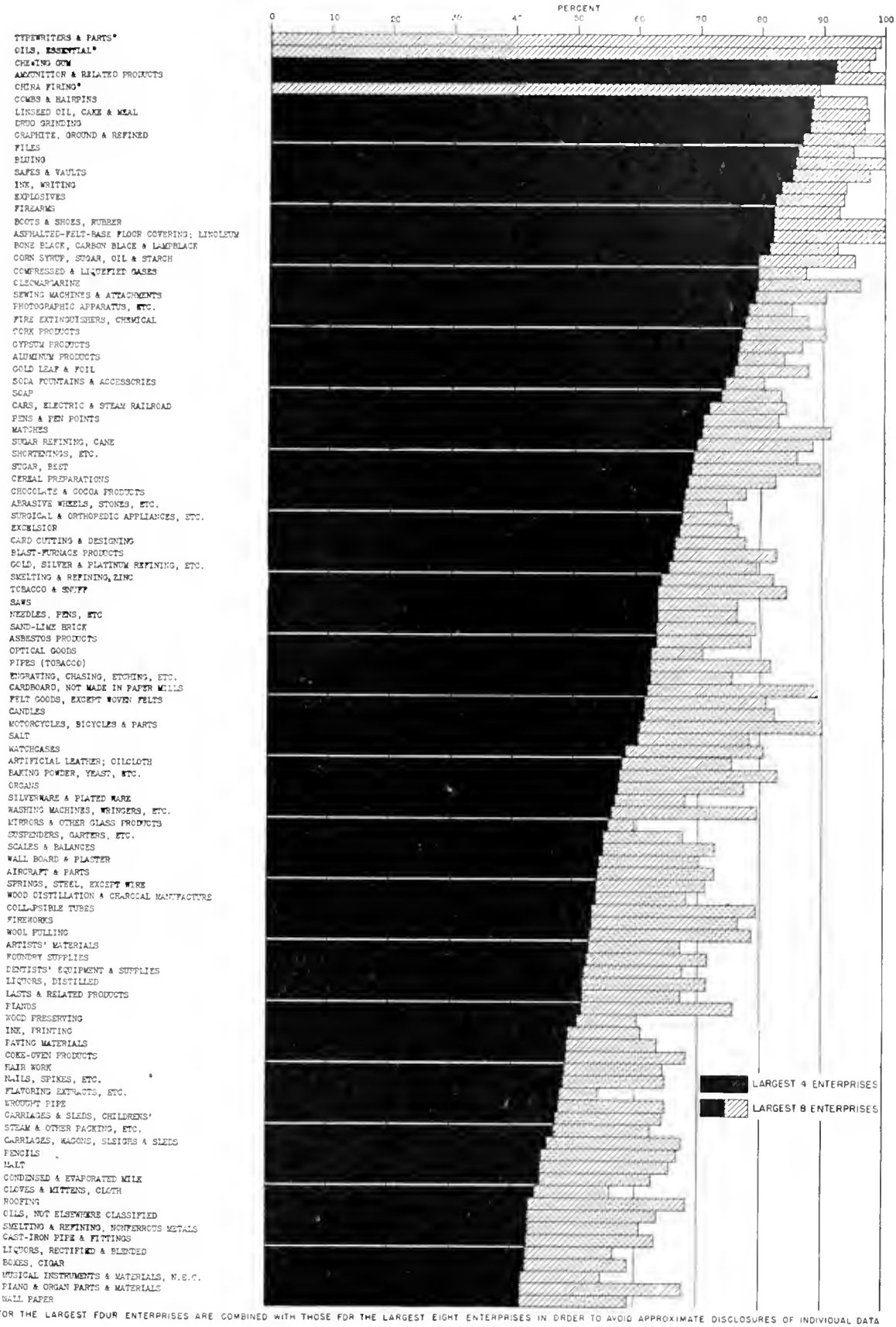
## INDUSTRIES EMPLOYING MORE THAN 100,000 PERSONS




## INDUSTRIES EMPLOYING 25,000 TO 100,000 PERSONS

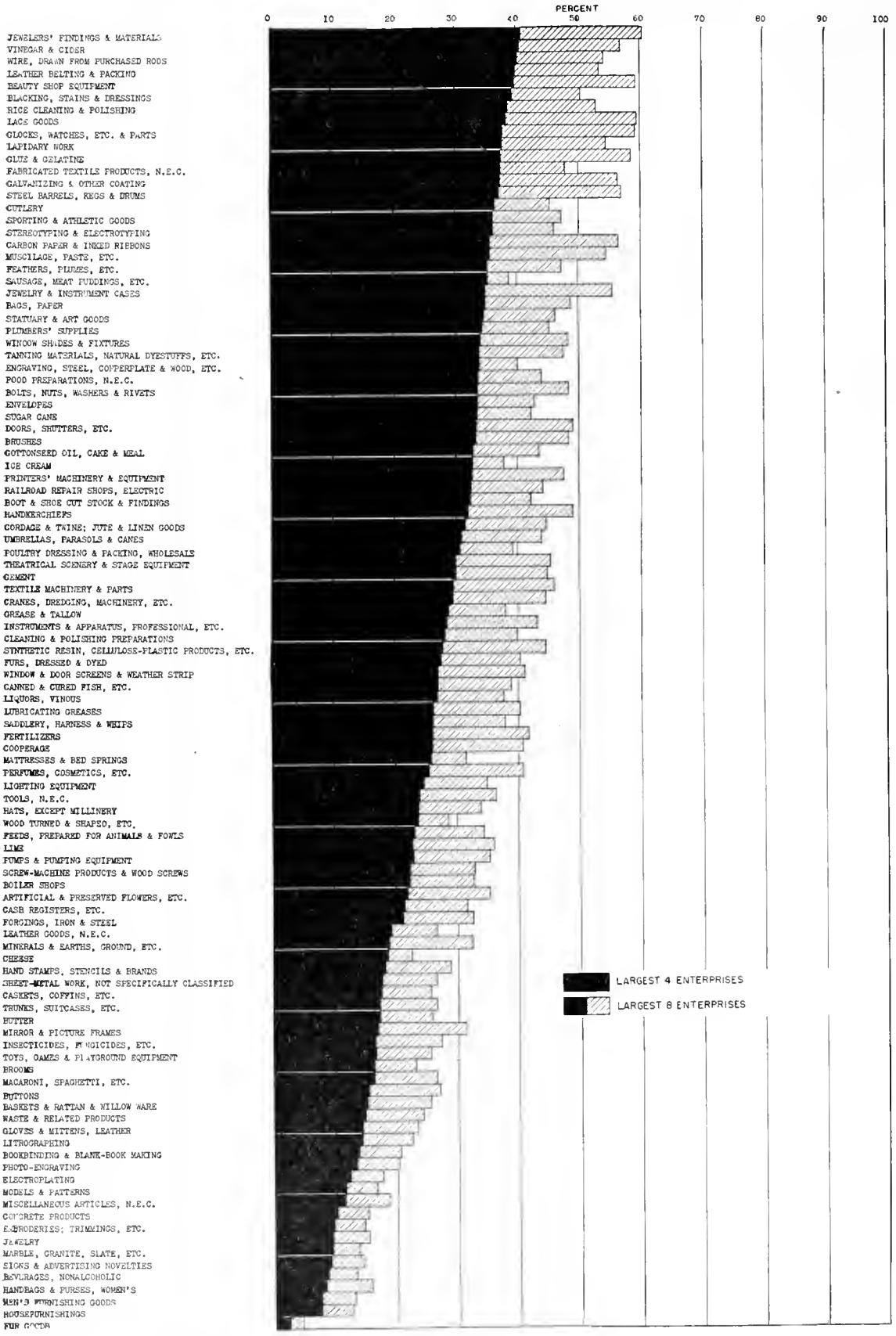


## INDUSTRIES EMPLOYING UNDER 25,000 PERSONS




* THE DATA FOR THE LARGEST FOUR ENTERPRISES ARE COMBINED WITH THOSE FOR THE LARGEST EIGHT ENTERPRISES IN ORDER TO AVOID APPROXIMATE DISCLOSURES OF INDIVIDUAL DATA

## INDUSTRIES EMPLOYING UNDER 25,000 PERSONS (CONTINUED)




Source: Based upon data given in appendix 7, table I.

has to adopt fairly comprehensive categories. Thus, cotton manufacture includes such diverse activities as the making of surgical gauzes, tire fabrics, belting, sheeting, yarns, and print cloths, while such industries as druggists' preparations, canning of fruit and vegetables, and most of the "not elsewhere classified industries" are congeries of separate industries, each having a more or less independent market. If the manufacture of each major product were taken separately, a very much greater degree of concentration would be shown. When the proportion of surgical gauze produced by the largest four producers of such gauze is taken separately from the largest four making tire fabrics and the largest four making cotton belting, and so on for each item, the concentration shown would presumably be much greater.[31] Except where the bulk of the product of an industry is fairly homogeneous, as in the case of cement, ice, and cigarettes, the census figures tend to minimize the degree of concentration in relation to the market.

Also, because the census figures report national totals, they minimize the concentration in industries not producing for a national market. Even though the bulk of both cement and ice is homogeneous, the market for these products on the west coast does not overlap the Mississippi Valley markets, nor do Atlantic coast cement and ice travel in significant volume to the midwest. Some products, such as bread and manufactured gas, are almost entirely produced for very local consumption. For many industries, like flour milling and cigar manufacture, the market for some producers is purely local and for others it is national. These industries have been classed on the basis of whether the bulk of production was for the local or the national market. The impossibility of completely separating the local from the national market thus tends also to make the data in chart II minimize the concentration in relation to the market which actually exists in the field of manufacturing.

The third element making these data minimize the degree of concentration in relation to the market is the high degree of product differentiation which exists in some industries. If the product of each producer is distinguished from that of the next by characteristics which are important to consumers, such as might arise from superior design or workmanship, patented advantages, or simply through the trade-mark of its producers, the products of separate producers are not homogeneous to the same extent as cotton which is produced by a multitude of separate producers and can be graded and each grade treated as homogeneous for market transactions. The significance of product differentiation will be pointed out in connection with prices.

[31] It would be identical if the same four companies were the largest producers of each item. Only under unusual circumstances could it be lower.

In spite of the fact that the data in chart II greatly minimize the degree of concentration in relation to the market in the field of manufacturing, they do indicate a very important degree of concentration. In approximately a third of the census industries the largest four companies contributed more than half of the value product of the industry, while in 60 percent of the industries the largest four companies contributed more than a third. If similar data were available, not for whole congeries of products but for specific items like electric motors or mens' work shoes, the degree of concentration in relation to the market would presumably be very much greater.

An examination of the chart does not disclose any clearly defined difference in the character of the products of the concentrated and the unconcentrated industries. There is a very slight tendency for the durable-goods industries to be more concentrated than the nondurable. In table VIII, the largest industries are arranged by durability and by concentration. For this group of industries the slightly greater concentration in the durable goods is indicated. The same tendency for durable goods to be more highly concentrated also appears among the medium and small industries. In none of these groups of industries, however, is the tendency very clear and further study may possibly show that the particular result here shown is more or less fortuitous. There is also a tendency for the newer industries to be more concentrated. Automobiles and parts, rubber tires and tubes, cigarettes, rayon, and refrigeration (mostly electric) are all concentrated to the point that 40 percent or more of the value of products in 1935 was produced by four companies.

On the whole the available data points to a significant degree of concentration in the manufacturing field as a

TABLE VIII.—*Large industries arranged by durability and concentration*

| Proportion of value of products produced by four largest enterprises | Nondurable | Semidurable | Durable |
|---|---|---|---|
| Over 60 percent | ..... | ..... | Motor vehicles.<br>Motor vehicles, bodies and parts. |
| 30–60 percent | Meat packing..... | ..... | Steel works and rolling mills.<br>Electrical machinery.<br>Railroad repair shops. |
| 10–30 percent | Canning fruits and vegetables.<br>Newspaper and periodicals.<br>Bread and bakery products.<br>Paper. | Boots and shoes.<br>Wool and hair manufacture. | |
| 0–10 percent | ..... | Cotton manufacture.<br>Men's cotton garments.<br>Knit goods.....<br>Men's clothing.<br>Books and publishing.<br>Women's clothing. | Machinery N. E. C.<br>Furniture.<br>Lumber and timber products. |

Source: Based on appendix 7, table II.

whole. There is sufficient concentration to make the bulk of the prices of manufactured products administered prices, as will be apparent in the discussion of prices. Among the industries employing 25,000 persons or more there was sufficient concentration to allow price administration in most industries.

The field in which the free market is dominant is that of agriculture. For the staple crops, price tends to be made in the market and is outside the control of any independent producer. Corn, wheat, cotton, hogs, and beef cattle, chickens and eggs, all show the free market type of price formation. In the production of these staples there is little concentration in relation to the market. So far as cotton, wheat, and hogs are concerned, the insignificant market position of the largest four and largest eight producers is given in the table below.

TABLE IX.—*Concentration in the production of three agricultural products*

| | Proportion of total by— | | Total number of farms producing |
|---|---|---|---|
| | Largest 4 producers | Second largest 4 producers | |
| | *Percent* | *Percent* | |
| Cotton (acres) | 0.14 | 0.09 | 4,850,000 |
| Wheat (bushels) | .13 | .08 | 1,364,000 |
| Hogs (number) | .09 | .03 | 3,971,000 |

Source: Largest producers determined from data on checks of $10,000 or more issued by the Agricultural Adjustment program to agricultural producers as reported in *Senate Document No. 274* (74th Congress, Second Session), 1936; and on production (cooperating) of largest producers and total national production for each product.

In each case the largest 4 producers account for an insignificant fraction of the total production, a small fraction of 1 percent. The marked difference between the conditions under which the prices for these staple agricultural commodities are formed and the conditions of price formation in the bulk of manufacturing activity is emphasized by the fact that there were less than 170,000 separate manufacturing enterprises reporting to the census of manufactures in 1935 and making the whole range of manufactured products. Yet there were nearly five million separate producers of cotton. Only in the nonstaple products of agriculture is the market such that the individual can administer his prices, and even there it is rare. The great bulk of agricultural production is destined for a market which is free so far as control by the individual producer or even the selling cooperative is concerned.

In the field of mining there is very inadequate data as to the concentration in relation to the market. It is well known that the mining of iron ore is concentrated, as is the mining of anthracite coal. Petroleum production and bituminous coal production are on the whole relatively unconcentrated, though in many local situations the latter shows some tendency toward administered prices.[32] There is need for more adequate data on concentration in the ownership of mineral resources and their extraction.

Construction is on the whole unconcentrated so far as the producing units are concerned.

The two remaining fields of activity, retail distribution and consumer services, are dominantly rendering services to a local market so that national totals throw little light on concentration in relation to the market. The lack of information on this score is not, however, significant since there is little retail trade that is carried on under free market conditions, and few consumer services provided on a free market basis. For the most part the individual consumer buys most commodities at prices set by the retail distributor or, under the Miller-Tydings Act, by the manufacturer. Consumer services likewise are supplied in large part on the basis of a fixed price schedule. Both are for the most part conducted on the basis of administered prices.

In summary, it can be said that there is such a degree of concentration in relation to the market for the bulk of goods in the American economy that to a major extent the prices of goods are formed on an administered basis rather than on the basis of a free market. Only in the case of agricultural products and certain other products is price formed in a free market. The significance of the extensive role of administered prices will be discussed in the chapter on the price structure.

*Concentration in relation to the market for labor.*—The market for labor is fundamentally different from that for goods. It is concerned primarily with the conditions of productive activity, not with the product of such activity. Both commodities and services relate to the results of economic activity and money paid for them is paid for the specific product or service. In contrast to this, wages and salaries are payments made to induce workers to accept the direction of someone else during working hours.[33] When a worker accepts employment with a particular enterprise he is agreeing to make himself part of the productive organization of the enterprise, to work under the direction of its management, and to leave the product of his activity at the disposal of the enterprise. In return for subjecting himself to this administrative direction, the worker receives a wage or salary which constitutes essentially a ticket on production redeemable in the products of this or other producers. As the chapter on money flows has already indicated, the paying out of these tickets on production,

[32] Petroleum production has been to a significant degree subject to production control through State action. Petroleum refining is a relatively concentrated industry.

[33] There are borderline cases which might be classed either as involving payments for labor or payments for services, but in most cases the classification is clear. It depends partly on customary usage but primarily on the degree to which one individual (or organization) acquires administrative authority over another. It is customary to regard the independent architect engaged to design a home as paid for a service, whereas an architect employed by a housing corporation on a salary basis to design homes is customarily regarded as an employee paid for labor. The degree of administrative control which he accepts is presumed to be greater in the latter case while the degree of independence is presumed to be greater in the former case.

and their subsequent redemption, is an essential part of modern industry. Such wage and salary payments represent simply one aspect of the continuing social relationships running from employee to employer and from employer to employee which form the basis of organized activity within administrative units.[34] The market for labor, therefore, cannot be effectively discussed as simply the market for a special type of commodity.

In spite of the fact that labor is not a commodity, the payments to be made to workers for accepting administrative direction are usually agreed on in terms of so much per unit of time worked or per unit of product produced. Wage or salary rates are thus similar in certain respects to the prices paid for commodities, and the processes by which these labor rates are arrived at are in some respects similar to those which lead to price determination in the market for goods. The competition of workers for jobs may result in lower labor rates, or the competition of employers for workers may lift the rates. Yet the similarities are probably less significant than the differences.

Because of the personal relationship involved in employment, it is doubtful if there could be such a thing as a free market for labor. To the wheat farmer it makes little difference who the purchaser of his wheat may be so long as he gets his money. Nor does the wheat purchaser usually care what farmer produced it. Though it usually makes relatively little difference to an enterprise whom it employs so long as technical qualifications are met, it usually makes a great deal of difference to the individual worker for what enterprise he works. The personal character of the transaction prevents the interchangeability which is essential to a free market.

In practice, the bulk of labor rates are administrative or quasi-administrative in character though the conditions surrounding the administration differ widely. There are four more common ways in which the administrative or quasi-administrative rates are established. (1) They may be arrived at through individual bargaining between the employer and employee with the rate maintained constant through a period of time on the basis of oral or written agreements but subject to revision from time to time on the basis of new bargaining. (2) They may be set by administrative action on the part of the employer as in the case of government and of many corporations and businesses. (3) They may be set by administrative action of a labor organization as in the case of some of the building-trade unions. (4) They may be arrived at through collective bargaining between representatives of producers and workers.[35] In each case the rates arrived at, like the administratively set prices of goods, are usually made in the light of existing market conditions so that they are not unrelated to the market. However, like administered prices of goods, they are not arrived at as the result of the interaction of many buyers and sellers bidding against each other in the market.

The administrative character of labor rates suggests that a considerable degree of concentrating of buying, selling, or of both, must exist. On the side of buyers, that is, among employers, there is a high degree of concentration in many if not most labor markets. This concentration arises from a variety of factors of which some of the more important are (1) the narrow geographical limits of most labor markets; (2) the limits imposed by specialized techniques; (3) the industrial concentration already referred to; and (4) the formal or informal arrangements which so often develop among the more important employers in local communities or particular industries. Each of these contributes to make the number of separate employers competing for the manpower in many particular localities and industries relatively small.

The geographical narrowness of particular labor markets cannot be overemphasized. While there are some fields, such as that of construction and the harvesting of agricultural crops, in which there is a relatively high degree of geographical mobility, and some workers in most communities, particularly the unmarried and those newly seeking work, who are so little tied to the community that they can easily move to a new locality, the bulk of workers in most communities are relatively immobile. They may own a home which would have to be sold at a loss if they were to seek employment in some distant community. They may have established social ties which hold them to the particular community. The lack of familiarity with other communities may act as an impediment to the seeking of work in new territory. This relative immobility of workers is reflected in the stranded populations of the worked-out coal areas of West Virginia and the cut-over timber lands of northern Michigan and in the very wide differences in wage rates in different parts of the country, particularly between the north and south and between rural and urban areas.

The relative immobility does not mean that there is not a constant moving of workers from one region to another, but only that there are sufficient impediments to such movement as to make each locality an almost independent labor market so far as short periods of time are concerned. The working population of a particular community can be somewhat augmented from the im-

[34] The importance given to the problem of maintaining esprit de corps in administrative units is significant evidence on this point.

[35] There are many other ways by which wage rates might be arrived at, but the above four seem to be factually the more important.

mediately neighboring communities or can seek work in the surrounding communities, but any major increase or decrease is usually brought about only gradually through a considerable period of time.

Not only is the particular labor market made narrow by the geographical immobility of labor but it is also made narrow by the specialized techniques of industry and the specialized skills which have to be developed to fill particular jobs. Neither the skilled typist nor the skilled cotton spinner is usually equipped to compete with the other for either of their jobs. The mason, the carpenter, and the electrician do not usually compete with each other in the same labor market. To shift from employment as a skilled worker or semiskilled worker in one industry to work involving the corresponding degree of skill in another often requires an extensive period of retraining which limits the quick shifting of skilled and semiskilled workers from industry to industry. This functional immobility is often quite as narrowing an influence on the market for labor as is the geographical immobility and is reflected in the wide differentials in labor rates which often exist between jobs in the same locality and calling for the same level of skill but requiring a different type of training. The national market for labor is thus in reality a series of relatively small markets divided from each other both geographically and by types of skill, but partially linked to each other by the mobility of the relatively footloose individuals in each community and by the very gradual mobility of other parts of the population.

Most labor markets are so narrow that they are dominated on the hiring side by a relatively few enterprises. There are many towns in which a single factory or mine is the main source of jobs. In other towns there may be only a handful of separate enterprises which absorb a major proportion of the workers, giving a significant degree of concentration on the hiring side which is augmented if the different enterprises do not compete for the same skills. Even in the larger cities, there are many skills the market for which is dominated by a few companies. This concentration on the hiring side of the labor market is augmented by the concentration of production into large administrative units, which has already been discussed. It is further intensified in many cases by understandings which develop between leading employers in a particular community or industry. These factors in combination operate to produce a high degree of concentration on the hiring side in the bulk of the labor markets of the American economy. If there were no counterbalancing concentration on the side of workers, the establishment of labor rates would be largely in the hands of individual producers, limited to a greater or less extent by market conditions and the partial mobility of workers.

In many fields, labor unions and collective bargaining operate to produce a considerable degree of concentration on the job-seeking side of the labor market. This concentration is usually narrower in scope than that on the employing side of the market because it only involves group bargaining, not group limitation on the supply of labor.[36] So long as the membership of a union is open to all comers in an industry, concentration on the labor side is limited to bargaining on the terms under which workers will be employed. In contrast, there is often sufficient concentration on the employing side of the market so that employers in particular communities and industries are in a position, not only to bargain on the terms of employment, but to limit the demand for workers by shifting work from one community to another or by limiting production itself. Even though unionization does not result in the same degree of concentration on the labor side of the market as that so often existing on the employing side, it does somewhat correct the unbalance in bargaining position so that in such cases labor rates are collectively bargained instead of being administered by the employing enterprises. Where there is little concentration on the employing side of a market, a strong union may be able to administer labor rates, thus providing an unbalance in the other direction.

Prior to 1935 the most important groups of organized workers were in the railroad, coal mining, clothing, and communication industries, and the skilled workers in the construction and printing industries. In 1933 approximately 2,973,000 workers[37] were reported as on the rolls of labor organizations or 11 percent of the total wage earners and salaried workers in the country.[38] Since that time union membership has expanded greatly until in 1938 a total claimed membership of over 8 million[39] or 27 percent[40] of the wage and salaried workers of the country in that year was reported.[41] The organizations to which these workers belong will be discussed in more detail in chapter IX in connection with the structure of controls. In this chapter their significance lies in the bargaining concentration in relation to the labor market which they give to the workers, thus making many labor markets relatively concentrated on both sides.

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[36] The lockout and strike are of course limitations in the demand for and supply of labor respectively, but they are extreme moves in the bargaining process rather than attempts to effect the level of labor rates by *continuing* restriction of demand or supply.

[37] Wolman, Leo, *Ebb and Flow of Trade Unionism*, p. 16.

[38] *Survey of Current Business*, June 1938, "National Income in 1937 Largest Since 1929."

[39] Rough estimate based on September 1937 estimates given in appendix 14, plus 500,000 additional to account for increase since that date.

[40] Estimate of wage earners and salaried workers in 1938 based on rough estimate of 2.5 million drop from the 1937 average of 32.5 given in the *Survey of Current Business*, June 1938.

[41] The latter percentage is likely to be somewhat inflated whereas the figures presented by Dr. Wolman are corrected for overreporting of membership. It should also be noted that all persons employed are not eligible for union membership, so the percentages do not represent the degree of organization of potential members

Written agreements between employer and representatives of employees covering both labor rates and other terms of employment constitute the best evidence of this concentration and the resulting quasi-administered labor rates. In July 1938 between 4,700,000 and 5,700,000 workers [42] were covered by such written union agreements. Industries in which there appeared to be a significant proportion of workers covered by such agreements are given in table X. The industries are grouped roughly according to the proportion of the workers that are covered by union agreements. No data are available on the actual number of workers covered by agreements in each industry. However, the importance of the industry is indicated in each case by giving the total persons employed.

For the great bulk of workers not covered by written agreements it is probable that there is sufficient concentration on the hiring side of the market to allow the employer to administer the labor rates within very appreciable limits, altering them from time to time in the light of market conditions and the functions being performed. This is certainly true of the rates paid by most government agencies, by most big business units operating in industries lacking labor organization, and in many medium and small enterprises. Only in the case of very small enterprises or special skills is individual bargaining the usual basis for arriving at labor rates. The behavior of labor rates under these conditions of relatively high concentration on one or both sides of the labor market will be discussed in the next chapter in connection with the behavior of all prices.

*Concentration in relation to the security markets.*—Security transactions can be broken down into four major categories which have quite different characteristics so far as concentration of buying or selling is concerned. These consist of (1) listed securities handled on the public exchange and not newly issued, (2) newly issued securities, (3) unlisted securities not newly issued, and (4) private, commercial, and similar loans which make up special types of security transactions.

In the case of a great many securities listed on the public exchanges and not newly issued, their prices are determined under relatively free market conditions. In such cases there are usually at any one time a sufficiently large number of owners in a position to sell at a price to prevent any one seller from dominating the market for any significant period of time, and there are enough buyers to prevent any one buyer from exercising a significant control over price except very temporarily. In the case of other listed securities, where large blocks

[42] For estimating the workers covered by written agreements a rough percentage was assumed corresponding to each group shown in table X and applied to the employment figures in each group. The range shown is calculated by increasing and decreasing the resulting figures for each group by 10 percent and then summing them.

TABLE X.—*Prevalence of written union agreements in the United States, July 1938*

| Industries covered | Number employed in industry, 1935 |
|---|---|
| A. Almost entirely under written agreements: | |
| 1. Clothing, men's (outerwear and furnishings) | 321,000 |
| 2. Clothing, women's (outerwear and underwear | 260,000 |
| 3. Coal mining | 455,000 |
| 4. Furs | 23,000 |
| 5. Glass (window, plate, and other flat glass | 73,000 |
| 6. Liquor, malt (includes route salesmen | 48,000 |
| 7. Musicians [1] | |
| 8. Newspaper printing and publishing | 234,000 |
| 9. Performers (legitimate stage, vaudeville, burlesque, grand opera, motion pictures, and radio performers) [2] | |
| 10. Railroad train and yard services | 333,000 |
| Total | 1,747,000 |
| B. Large proportion under written agreements (more than half): | |
| 1. Aluminum (refining and fabrication) | 22,000 |
| 2. Automobiles and parts | 425,000 |
| 3. Book, magazine, and job printing and publishing | 166,000 |
| 4. Building and construction [1] | 719,000 |
| 5. Cement manufacture | 23,000 |
| 6. City passenger transport (street railway, elevated, bus, and subway) | |
| 7. Electrical equipment (includes radios | 275,000 |
| 8. Hats and millinery | 51,000 |
| 9. Iron and steel | 389,000 |
| 10. Longshore | |
| 11. Machinery and parts | 205,000 |
| 12. Maritime transport (licensed and unlicensed personnel) | |
| 13. Railroad clerical service | 172,000 |
| 14. Railroad shops and maintenance | 414,000 |
| 15. Rayon yarn | 54,000 |
| 16. Rubber (tires, inner tubes, boots, shoes, and other rubber goods) | 132,000 |
| 17. Stoves | 49,000 |
| 18. Tailors (merchant tailors employed in retail trade) | 15,000 |
| Total | 3,111,000 |
| C. About half under written agreements: | |
| 1. Baking (bread, cracker, cake—includes route salesmen) | 240,000 |
| 2. Glassware | 42,000 |
| 3. Intercity bus transport | |
| 4. Metal mining, nonferrous | 53,000 |
| 5. Petroleum (crude production and refining) | 243,000 |
| 6. Shipbuilding and repairs (private shipyards) | 51,000 |
| 7. Shoe | 216,000 |
| 8. Silk and rayon textiles | 132,000 |
| 9. Theater and motion-picture studio employees (motion-picture operators, box office, stage hands, costume seamstresses, etc., in legitimate and motion-picture theaters; studio production employees) | |
| 10. Trucking (city and intercity—includes route salesmen) | 158,000 |
| 11. Upholstering and floor covering (employees in retail trade) | 9,000 |
| Total | 1,114,000 |
| D. Moderate proportion under union agreements: | |
| 1. Barbers [1] | |
| 2. Brick and clay products (includes pottery and chinaware) | 50,000 |
| 3. Canning (vegetable, fruit, fish, etc.) | 140,000 |
| 4. Cigarettes | 26,000 |
| 5. Cigars | 50,000 |
| 6. Coke and manufactured gas | 45,000 |
| 7. Cotton textiles and small wares | 396,000 |
| 8. Dyeing and finishing textiles (excluding textiles) | 79,000 |
| 9. Flour and other grain products | 31,000 |
| 10. Furniture (wood, upholstered and metal) | 146,000 |
| 11. Hosiery | 114,000 |
| 12. Hotels and restaurants [1] | 787,000 |
| 13. Jewelry and silverware | 33,000 |
| 14. Leather (tanning and leather products, other than shoes) | 120,000 |
| 15. Light and power | 231,000 |
| 16. Lumber and timber products (logging, sawmills, planing mills, and products other than furniture, pulp and paper, turpentine and rosin) | 156,000 |
| 17. Milk and other dairy products (includes route salesmen) | |
| 18. Newspaper office employees (editorial, circulation, and advertising departments) | |
| 19. Pulp and paper products | 94,000 |
| 20. Sugar refining, cane | 15,000 |
| 21. Taxi | |
| 22. Telegraph | 70,000 |
| 23. Woolen and worsted textiles | 176,000 |
| Total | 3,102,000 |

Source: This classification was prepared by the Industrial Relations Section of the Bureau of Labor Statistics; it is based upon union agreements and other information in the files of the Bureau, not upon a statistical survey.

[1] Conditions regulated in many cases by detailed written working rules which may be orally accepted by each employer without being incorporated in an individual written agreement.

[2] Stage, vaudeville, burlesque, and grand opera performers are generally covered by individual contracts with uniform provisions, as agreed upon in collective bargaining.

of a particular stock or bond are held by a few owners, the conditions of a free market may be lacking.

In contrast to these relatively free market conditions for seasoned securities, new security issues cannot usually operate on the basis of a free market. Such large blocks of a stock or bond issue are initially held by the issuing corporation and subsequently by the underwriting syndicate that a free market cannot be expected. For a time the syndicate almost necessarily dominates the selling side of the market and is in a position to "break" the market. The economic implications of the process of new security flotation have received so little attention that it is not possible to indicate clearly the structural significance of the lack of a free market in the period of initial flotation.

Unlisted securities usually have a somewhat less broad market than listed securities and are therefore more subject to control for periods of time by a particular buyer or seller. Often administered prices appear in this field as a particular firm specializes in a certain issue, offering to buy at a price which is held constant for considerable periods of time. The same firm is likely to establish a selling price constant for periods of time. The difference in the fixed buying and selling price constitutes the equivalent of a commission for handling the securities and taking the risks of maintaining the market.

Transactions involving private and commercial and other loans appear to run the whole gamut of market conditions. While there is little evidence of concentration in relation to the market on the part of either lenders or borrowers in the main financial centers when large sums and ample security are involved, the small local borrower is usually faced with only a small number of potential lenders. The extent to which lending terms are administered by the lender, are bargained between the lender and the borrower, or are made in the free market, cannot be set forth here, but it is well known that administered terms are set by the lender so far as a large body of small businesses and borrowers are concerned, and that the terms often remain constant for months or even years at a time. How significant this is to the structure of the whole economy is a problem which has received little attention and yet may be important.

The foregoing survey of the degree of concentration in the three main markets—goods, labor and securities—has blocked out the areas in which the market mechanisms facilitate the organization of resources through free market prices and the areas in which the market operates through prices which are not currently set by the interaction of a large number of independent buyers and sellers. In spite of its crudeness, the survey has shown that outside of the prices of agricultural products and listed securities, the bulk of prices, including labor rates, are not established in free markets. This is an essential structural characteristic of the American economy. The fact that such a large proportion of prices are made in markets in which there is a relatively high degree of concentration of buying, of selling, or of both, is an essential key to an understanding of the behavior of prices and of the organizing function played by the market mechanism in the American economy. It means that the market mechanism plays a smaller role in the organizing of resources than would be the case if the bulk of prices were made in free markets and points to the larger role played by administration and by the other organizing influences yet to be discussed.

### Coordination through Canalizing Rules

The framework of laws, rules and customs which canalize human activity without dictating it are so familiar that their organizing influence is often little realized except as some sharp change is made such as the adoption of a new canalizing law or the widespread breaking of an old custom. Yet in practice they are probably as essential to the effective organizing of resources as are administration and the market mechanism. Consider how much the American one-price system of retail buying and selling contributes to effective retail distribution, yet it is only a matter of an accepted custom. Or the great aid to the organizing of production which is given by the standard rules of double-entry bookkeeping which are mostly a matter of custom though sometimes codified into law for such types of activity as railroad or utility operation. Essential to the effective working of many of the organized markets are the marketing rules by which transactions are guided but not determined. The laws which require the fulfillment of contracts and laws which limit the theft or destruction of physical wealth are essential to the organization of modern industry. All of these constitute examples of working rules by which human activity is guided into more productive channels.

Not all the laws, rules, and customs are solely canalizing in character. Some dictate specific action, as when an income-tax law requires a specific payment or a safety regulation, as interpreted by a regulating agency, requires the demolition of an unsafe building. Laws which call for specific performance are administrative in character though they may also have a canalizing influence.

On the whole, the bulk of laws, rules, and customs are primarily canalizing. By setting up barriers to particular actions they narrow down the range of discordant activities and thereby encourage activities on the part of individuals, enterprises, and government units which mesh with each other in a more organized fashion than would be possible in the absence of their canalizing influence. The zoning ordinance which limits new factory construction to one part of a city

and separates residential from commercial areas does not require anyone to build a new factory but only requires that *if* a new factory is built it should be built in the manufacturing area, not in the residential or commercial area. Such an ordinance can thus produce a more organized development of a city without administering that development. It canalizes city development without dictating specific performance.

Relatively little analysis has been made of the organizing influence of canalizing rules in the field of economic activity. Studies have been made of the way laws come into being, the way government institutions develop, and the way individuals holding political positions acquire those positions or are displaced, but relatively little attention has been given to the organizing influence which laws have on economic activity.[43] Until more extensive analyses have been made, it is not possible to indicate clearly the role played by canalizing rules. Yet such work as has already been done indicates clearly that laws, rules, and customs do play a major role in making the separate activities of millions of individuals mesh into the organized activity of the American economy.

### Coordination through Accepted Goals

The fourth major organizing influence, that of accepted goals, has received even less study than canalizing rules yet it is clear that it plays a significant role in the organization of the use of resources. When two or more people agree to accomplish a certain objective it is often possible for their action to be coordinate simply because each one acts in terms of the logic implicit in the accepted goal. In such a simple action as moving a table across a room, if two men agree on this action, each one almost automatically takes hold of the end of the table nearest to him. Only if neither is nearer one end than the other do they waste effort by both grabbing for the same end of the table. In the complex life of every day, reliance is constantly being placed on the logic of accepted goals to guide individuals so that their separate activities fit together. A meeting is to be held, a big contract is to be filled, or a boat is to be docked. With only a minimum of specific instructions, the individuals directly responsible for any one of these activities will take up their appropriate positions and carry forward their respective functions. The man on the pier does not have to be told to catch the first coil of rope thrown out from the boat as it comes close to the pier, draw in the slack, and drag the following hawser over the appropriate capstan. His training allows him to follow the logic of the situation as it develops, drawing in the successive hawsers, perhaps receiving directions from time to time with respect to particular details of action but, on the whole, carrying out those actions implicit in docking the boat which are appropriate to his position. Each other member of the pier crew is likewise guided to a greater or less extent by the logic of the job in hand. With a minimum of explicit direction, the organized activity of tying the ship up at the pier is carried forward. In situation after situation which could be analyzed, organization is to a significant extent the result of the acceptance of some explicitly recognized goal though in more complex situations its influence is usually combined with that of the market mechanism, administration, and canalizing rules, the different influences in combination producing the organized result.

So little study has been given to the part of the organizing influence of accepted goals in economic matters that it is not possible to set forth their role in the organizational structure of the whole economy. It is well recognized that in times of war the national unity growing out of the widespread acceptance of the single war objective does act as an organizing influence. In peace times there may be similar though less clearly discernable results growing out of the acceptance of national goals. Until analyses along this line have been developed, the role of accepted goals which is so important to the organization of activity in lesser spheres cannot be set forth as it effects the organizational structure of the whole economy.

Regardless of the exact role of accepted goals, there can be little question that the four factors discussed above, administration, market mechanism, canalizing rules and accepted goals, are of major significance for the organized use of resources. Together they constitute the main influences which make the separate activities of the millions of workers in the nation combine into an organized whole. Each concrete situation usually involves a combination of these influences, sometimes in one proportion, sometimes in another. These influences in combination provide the organizational structure of the whole economy and the relative roles which each plays gives its specific character to the organizational structure of the American economy.

[43] A few studies of the character suggested have been made as John R. Commons, *The Legal Foundation of Capitalism;* James C. Bonbright, *Valuation of Property;* and Berle and Means, *The Modern Corporation and Private Property.*

# CHAPTER VIII.—THE PRICE STRUCTURE

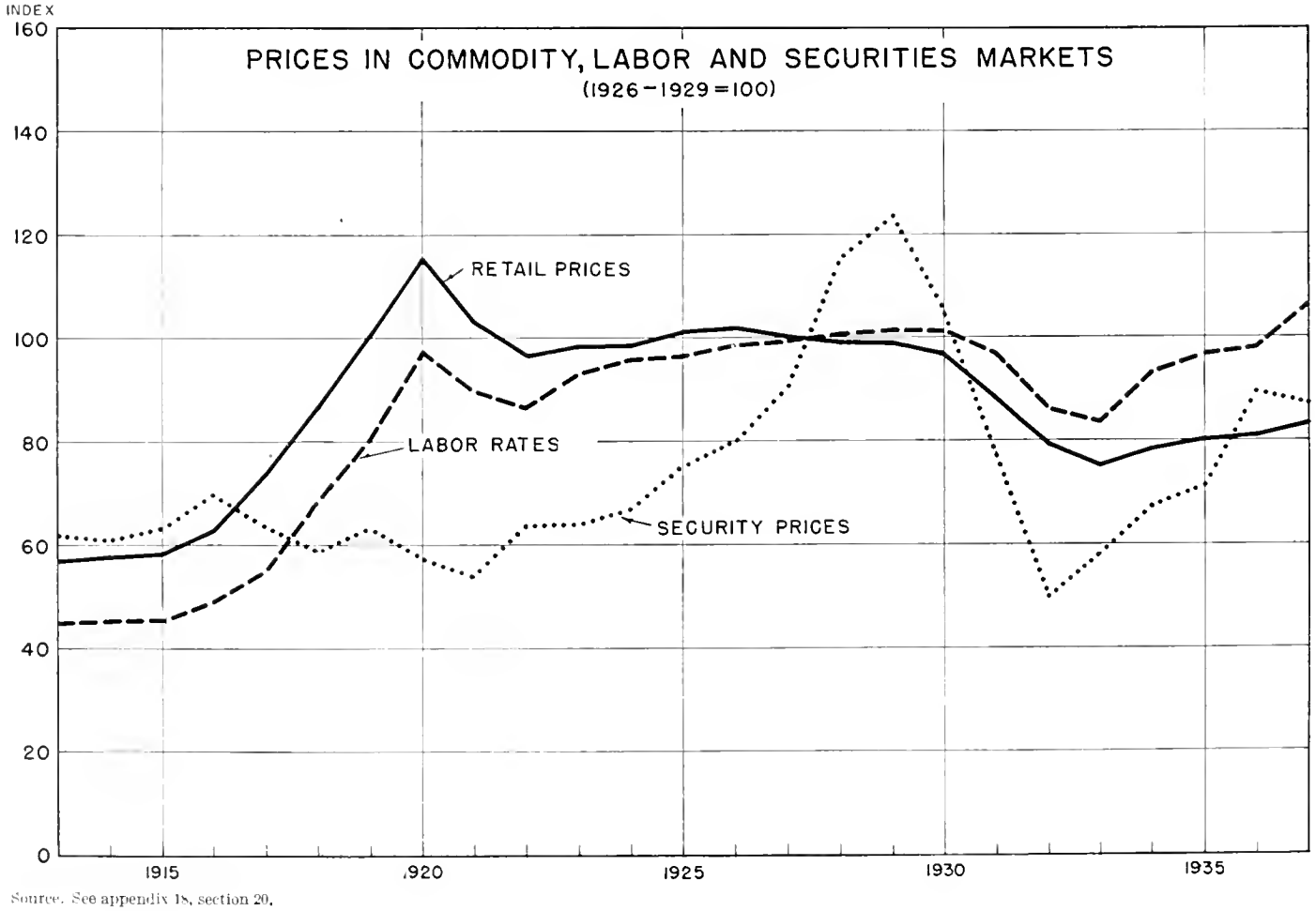
## Introduction

In the preceding chapter the market mechanism has been emphasized as a major coordinating influence. This coordination is brought about through the series of exchanges between economic units. These in turn are in large measure governed by prices which act as a mediator in apportioning resources and benefits. It is the purpose of this chapter to examine the structure of prices in order to discover, if possible, the extent to which they do in fact contribute to full and effective use of resources. Following the procedure of earlier chapters, the price structure will be considered first in terms of the interrelationship of prices as of a given time, then in terms of the trends of change, and finally in terms of their sensitivity to depression.

Prices fall into three major categories according to the three main types of transactions which they govern—goods, manpower, and securities. The first, goods prices, involves primarily the products of productive activity, including capital goods as well as consumption goods and both commodities and services. The second category involves primarily the employment arrangements whereby individuals agree to work under administrative direction for a wage or salary. The contractual wage or salary rates enter into the price structure as the price for manpower. The third category, that of security prices, refers primarily to the legal instruments representing the prospect of future money returns in such forms as interest and dividends.[1]

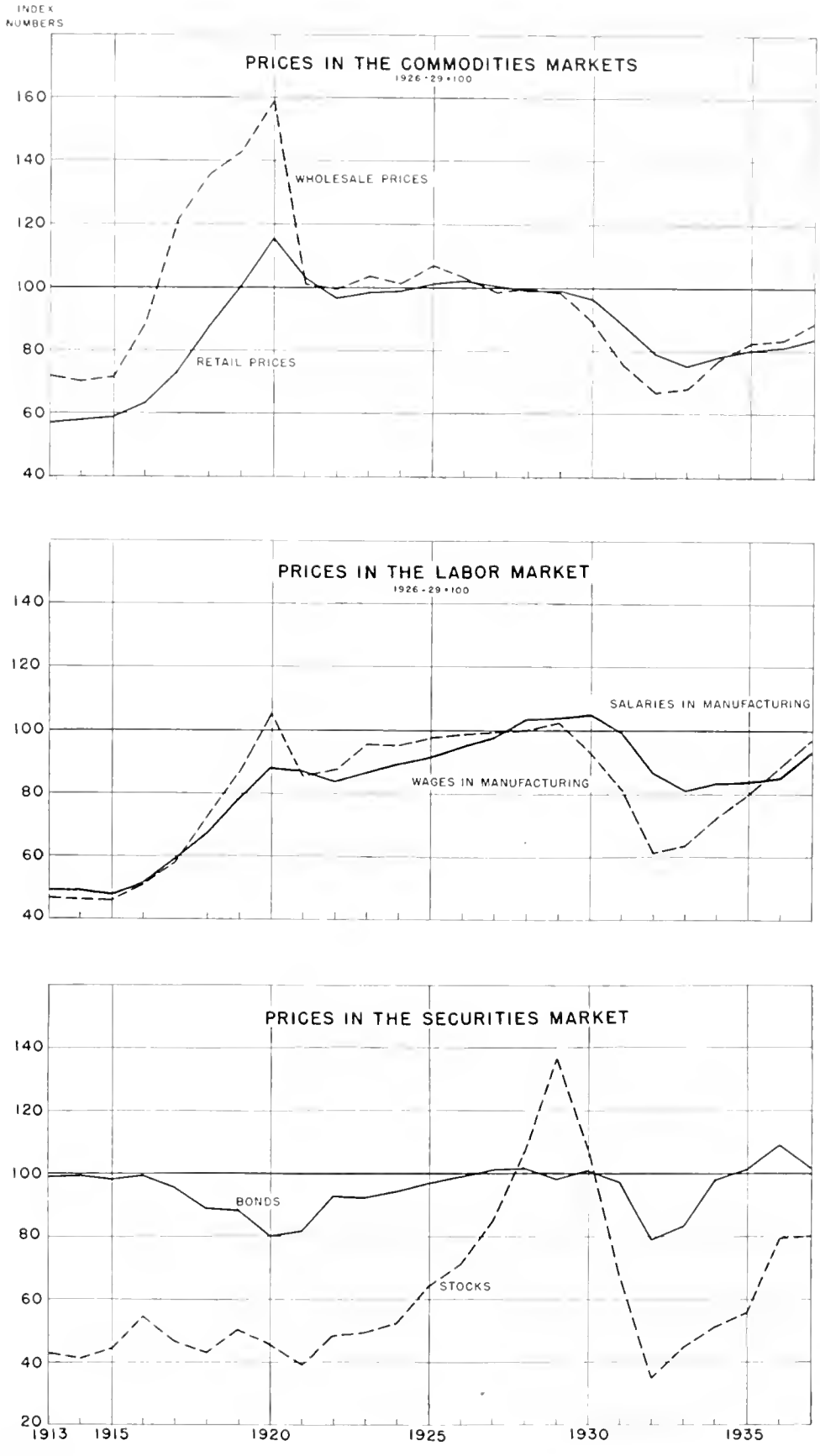
[1] These legal instruments often involve more or less contingent threads of control over productive enterprises, as in the case of voting stock, or over instruments of production, as in the case of a farm mortgage, but their main characteristic from the point of view of price is their prospect of bringing in money to the purchaser in the future. At their initial sale, securities may bring capital to productive enterprise or funds to be spent on current consumption, whereas in subsequent sales the interest and controls represented by the security are transferred from one holder to another at a price. In either case the essential nature of the transaction is the payment of money currently for the prospect of receiving money in the future.

CHART I




Source. See appendix 18, section 20.

CHART II




Source: See appendix 18, section 20.

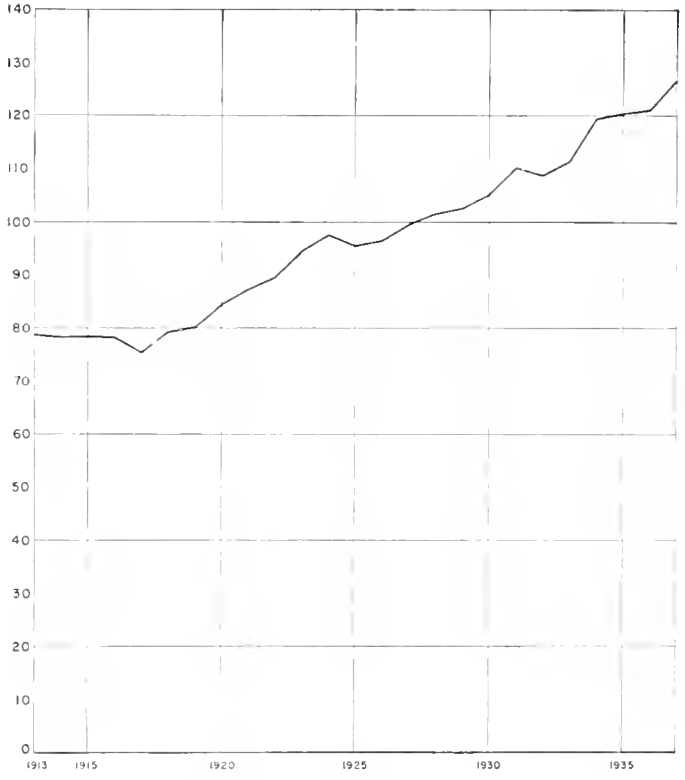
In order to cover the essentials of the price structure, it would be necessary to outline the structure of prices in the goods market, the structure of wage and salary rates, and the structure of security prices, and to follow through the interrelations among these three structures.

### The Relation Between Goods Prices, Labor Rates, and Security Prices

A rough indication of interrelation between prices in the three main price fields can be obtained by comparing price indexes representing price behavior in each field. In chart 1, crude indexes are given of the changes in goods prices at retail,[2] in labor rates, and in security prices. An examination of this chart indicates that retail prices and labor rates tend to fluctuate fairly closely together for short periods, both rising sharply in the war years from 1915 to 1920 and then falling together in 1921 and 1922, falling again from 1930 to 1933 and rising from then to 1937. This close relation between fluctuation in hourly labor rates and fluctuations in retail prices holds for both hourly wage rates and salary rates but neither appears to fluctuate closely with wholesale prices. This is made apparent in chart II, which gives indexes for each of the four items separately and shows wage and salary rates fluctuating fairly closely together while wholesale prices show much more violent fluctuations in the war period than do retail prices.

Though labor rates and retail prices tend to fluctuate roughly together for short periods, labor rates have increased fairly steadily in relation to retail prices. This is shown in chart III, which gives the relation of hourly

CHART III.—*Ratio of wage rates to retail prices 1913–1937, 1926–29=100*




Source: Based on data given in appendix 18, section 20.

labor rates to retail prices. Taking the index of retail prices as 100,[3] the index of labor rates increased fairly steadily from 78.8 in 1913 to 126.5 in 1937. Both the retail price index and the labor rate index are too crude to allow a precise measurement of the increase in the real buying power of hours of labor, but they point to a very real and fairly continuous increase since 1913. This increase does not necessarily mean that annual incomes have increased but only that an hour of labor can buy more goods.

The increase in hourly labor rates in relation to retail prices presumably reflects, for the most part, such of the gains from technical improvement as have been passed on to the consumer in the form of either lower prices or higher labor rates. Just how far the gains from technical improvement have actually been passed on and how far they have been retained by producers cannot be determined without intensive research, but it is clear that in very considerable magnitude the gains have been passed on. In the main this has resulted from the individual producer's effort to expand his markets, from price competition among producers, and from the pressure of organized labor to increase its hourly wage rates.

[2] As an index of retail prices, the Bureau of Labor Statistics *Index of the Cost of Living* is used to reflect goods prices because it is probably more typical of goods prices as a whole than an index of wholesale prices or a composite of wholesale and retail prices. In the first place the cost of living is on the whole more comprehensive than an index of wholesale prices. It includes the prices for many commodities and services which do not pass through the wholesale markets, such as the professional services of doctor and dentist, the personal services of barber shops, amusements, and house rentals. It also reflects in the price of retail commodities not only the price for the function of retail distribution but to some extent the wholesale prices of the commodities distributed at retail. On the other hand, it misses the goods sold at wholesale but not passing through the retail markets, such as capital equipment and construction goods. In the second place, both the wholesale and retail indexes probably exaggerate the flexibility of prices because they tend to be made up of more standard commodities which, on the whole, fluctuate in price more than nonstandard goods. This exaggeration of flexibility is probably inherent in the creation of price indexes. In order to construct an index of prices it is almost essential to employ the prices of relatively standard products to typify the prices in whole industries. Yet in most industries the standard products are, on the whole, more flexible in price than the less standard products. Thus cotton yarns and standard cotton sheeting, print cloth and similar standard fabrics are used to typify the cotton textile industry. These are items all of whose prices are relatively flexible. But approximately 20 percent of the value of products of the cotton textile industry is made up of specialty products such as draperies, plush, velvet, surgical dressings, woven labels, which are relatively less flexible in price. For most industries it is easier to obtain continuous price series for standard products than for specialty products and the price of a standard product seems a more appropriate item in a price index than the price of any single specialty product because it is likely to represent a larger proportion of the total product of the industry. The same exaggeration likewise tends to arise in the cost of living index, though since the items in the cost of living index are, on the whole, less flexible than wholesale prices the exaggeration of flexibility is probably not so great.

[3] Both indexes being based on 1926–29 as 100.

This passing on of the gains from technical improvement can be seen in detail in some of the industries which have shown great strides toward more efficient production in recent years. In chart IV below, hourly wage rates[4] and indexes of wholesale prices are given for three such industries. In the automobile industry the price of cars declined fairly steadily from 1926 to 1933, while wage rates appear to have been increasing steadily from 1926 to 1937 except for the depression years of 1932 and 1933. Not only was the quality of the low-priced car steadily improved but the technical improvement which reduced the man-hours necessary to produce a car was to a greater or less extent reflected in the smaller number of hours which it was necessary to work in the industry in order to obtain enough wages to buy a car.[5]

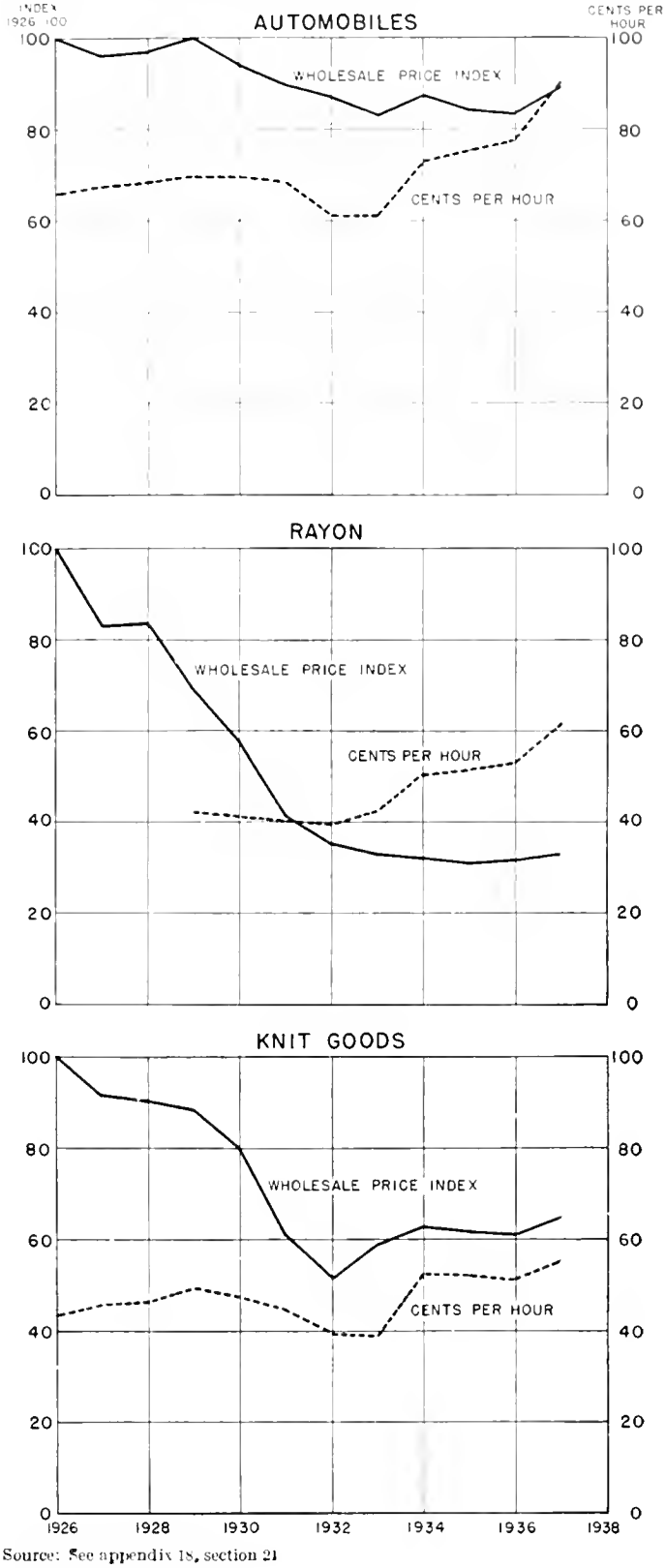
In the case of rayon, the price dropped sharply from 1926 to 1931 and more gradually thereafter, reflecting the decreased costs of production. Unfortunately data on hourly earnings are not available prior to 1929. The level of earnings in that year, however, and some steady increase shown since 1932 indicate that the gains from technical improvements in this industry were first passed on to the consumer in the form of lower prices and subsequently passed on to the workers in the form of higher wages.

The knit goods industry appears to have gone through a period prior to 1930 when technical gains were passed on through both price decline and wage increase. Thereafter prices and wages have moved up and down together, maintaining a fairly constant relationship with each other.

In considering the gains in the buying power of hourly earnings it is important not to confuse these with increases in annual wages or with improvements in the standard of living. Because of extensive unemployment and part-time employment, increases in relative hourly wages have not necessarily meant an increase in annual income. Likewise even with full-time employment the reduction in the hours of the standard work week, already indicated in chapter V has reduced the total hours worked so that the increase in relative hourly wage rates has not resulted in a commensurate increase in income even for those persons fortunate enough to be fully employed. In each of the three industries shown in chart IV, weekly earnings were lower in 1936 than in 1929 although hourly wage rates were substantially higher.[6] The significance of the decline of goods

CHART IV

WHOLESALE PRICES AND HOURLY WAGE RATES IN SELECTED INDUSTRIES 1926-37




Source: See appendix 18, section 21

[4] National Industrial Conference Board hourly earnings are used in this chart for automobiles and knit goods although they differ somewhat from the hourly earnings shown for these industries in appendix 6. The latter are based on Bureau of Labor Statistics data, which are not available for the years prior to 1932.

[5] The manpower involved in producing the raw materials for the industry and the wage rates paid in their production should also be taken account of, but data are not now available in a form to do this.

[6] See appendix 18, section 21.

prices in relation to hourly labor rates lies in the decline in real prices in response to the decline in real costs resulting from technical improvement. Only under conditions in which resources were continuously used to the full and men and equipment were not idle would this decline in prices be surely reflected in an increase in the standard of living.

In contrast to the closely similar behavior of the indexes of retail prices and labor rates, security prices appear to fluctuate in a manner largely independent of these two. Between 1915 and 1920, when both retail prices and labor rates approximately doubled, the index of security prices fluctuated relatively little. It was, in fact, slightly lower in 1920 than in 1915 since, although stocks went up a little, bonds dropped appreciably in response to the higher rates of interest resulting from the war, as can be seen in charts I and II. Between 1922 and 1929 when both retail prices and labor rates were relatively stable except for the gradual increase in the latter, the index of security prices approximately doubled, the bonds index recovering its earlier loss and the stock index tripling. Only in the depression period from 1929 to 1937 do the indexes of retail prices, labor rates, and security prices show the same general behavior. All three declined with depression and rose with recovery, security prices dropping sooner and more sharply and recovering sooner and more sharply than the other two. Retail prices dropped more than labor rates and recovered less, thus continuing the trend toward higher hourly labor rates in relation to prices already referred to, but neither retail prices nor labor rates dropped as far or recovered as much as security prices.

So far, in discussing the structure of prices, attention has been focused on general price indexes typifying the three main types of market transactions. This was done in order to emphasize the general relation of the different markets to each other. Actually within each of these markets there is the greatest diversity of price behavior, with certain patterns running through this diversity which appear to give to the system of prices in the United States its essential structure. For the purpose of examining these patterns of price behavior, each market will be considered in turn, first the prices of goods, then labor rates and then, very briefly, security prices.

## The Structure of Goods Prices

In comparing indexes of goods prices with indexes for labor rates and security prices, an index of retail prices has been employed to represent the general behavior of goods prices. This index has been used because, on the whole, an index of retail prices seems more typical of the behavior of goods price than the wholesale price index or than any composite index which could at present be constructed. But in examining the internal structure of goods prices, the constituent items in the available wholesale price index appear likely to give a better basis of analysis than those making up the retail price index. The available data on individual wholesale prices are on the whole more reliable than those for retail prices;[7] wholesale prices tend to be more sensitive than retail prices and thus magnify the essentials of the goods price structure; and finally, wholesale prices lie at the heart of the goods market and their behavior is basic to the economic adjustments by which the market mechanism can operate to facilitate the full and effective use of resources.

As is to be expected, the behavior of individual wholesale prices is very different from that of the wholesale price index. A fairly typical sample of individual price series is given in chart V.[8]

The separate series show the greatest diversity of behavior. Both egg and coal prices show a marked seasonal variation, but egg prices show clearly the influence of the depression, while the price of coal hardly reflects the depression at all, the drop in price from 1929 to 1932 being more like a step in a longer trend of declining anthracite prices. Most of the series show the influence of the depression to a greater or less extent, though men's dress shoes fail to show a depression decline in price and rayon fails to show a rise in price with recovery. Tobacco prices followed fairly closely the behavior of the wholesale price index, while rye shows independent fluctuations which might be traced to variations in the size of crop. The top four series show price changes practically every month, while the price of rayon and dress shoes reflect an appreciable degree of administrative control, each of them remaining constant for months at a time. Glucose is intermediate, being fairly flexible in price yet showing occasional periods of price administration. Almost any group of wholesale prices chosen at random will show this same diversity of behavior.

### Sensitivity to Basic Factors Conditioning Economic Activity

The first important structural characteristic underlying this diversity of behavior is associated with differences in the sensitivity of prices to gradual changes in the basic factors which condition economic activity—changes in techniques of production, in available resources, and in consumer wants. If prices are to act in such a way as to apportion resources in balanced fashion between different uses, price relationships must

[7] The reliability of the constituent items in the Bureau of Labor Statistics *Wholesale Price Index* is discussed in detail in appendix 1.

[8] This chart shows the variation in price movements by months.

undergo constant adjustment to new conditions. When improved techniques of producing rayon are developed so that less manpower is necessary to make it, the full use of the new techniques will be developed only if rayon production is expanded to an extent corresponding to the reduction in the resources, including manpower, necessary to produce it. This calls for a lowering of rayon prices in relation to the prices of other textile fibers. Likewise, if the supply of a particular resource is approaching exhaustion, balanced use of resources requires a restriction of its use to the filling of the most pressing wants and the substitution of other materials where possible. If this restriction is to be accomplished through price, a gradual increase in the relative price of the particular resource would be required. Finally, when consumers' wants shift from one type of goods to another, the readjustment in the use of resources calls for readjustment in price relationships.

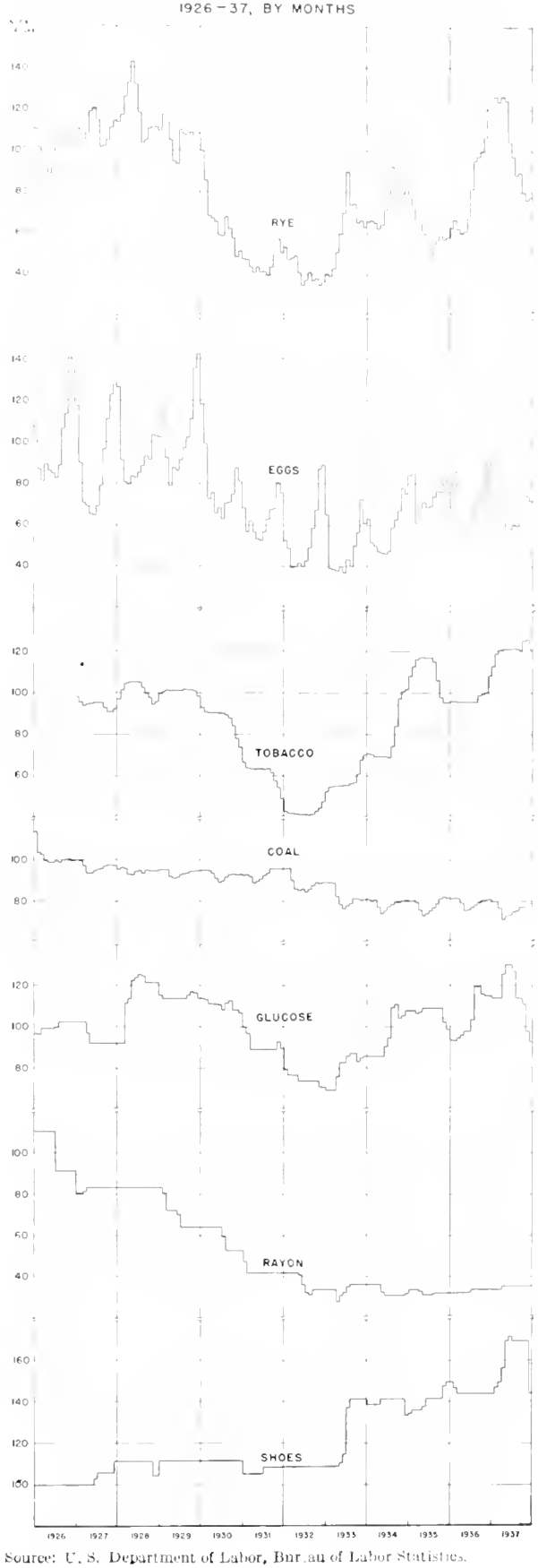
It is an important characteristic of these changes in price relationship which work for balanced use of resources that they require only gradual change. They do not call for day-to-day or week-to-week or monthly changes. While flexible market prices may actually make this adjustment by constantly changing, a price which was readjusted only once or twice a year might also be sufficiently flexible to keep pace with the underlying changes in techniques of production, in available resources and in consumer wants. At best the most effective use of resources which can be hoped for in practice can only be a crude approximation to a balanced use and, so long as full use of resources is maintained, relatively infrequent readjustments in price could serve to maintain approximate balance in price relationships. Thus while administered prices which change infrequently do not contribute effectively to full use of resources, as will be made clear in the next section, there is nothing inherent in such administered prices to prevent relatively balanced use of resources, provided full use is not dependent on their flexibility.

The extent to which both market and administered prices adjust to the basic conditions underlying the use of resources could be clearly brought out if adequate data were available covering a fairly long period of full use of resources with relatively stable prices. Unfortunately, long periods of sustained full use of resources have not occurred in recent times. The period from 1923 to 1929 was one of relatively full use of resources but relative price stability after the post-war distortions was not achieved until 1925 or 1926. By analyzing the price data for the period from 1926 to 1929, however, considerable light can be thrown on the price readjustments which take place in the presence of relatively full use of resources and a relatively stable level of goods prices.[9]

[9] The choice of 1926 as the initial year in the period analyzed is due in part to the fact that the number of items on which wholesale price data is published by the Bureau of Labor Statistics was greatly increased in that year

CHART V

EXAMPLES OF VARIETY IN WHOLESALE PRICE BEHAVIOR
1926–37, BY MONTHS




Source: U. S. Department of Labor, Bureau of Labor Statistics.

Between 1926 and 1929, though the index of wholesale prices dropped only 4.7 percent, individual prices changed in such a way as to bring very considerable alterations in price relationships. This shift in price relationships is clearly indicated in chart VI which shows the 617 items included in the Bureau of Labor Statistics wholesale price index distributed according to the percent change in price from 1926 to 1929.[10] Approximately 93 of the items dropped from 0 to 5 percent, thus following fairly closely the change in the wholesale index which is indicated by the dotted line. On the other hand, 67 items were more than 15 percent higher in 1929 than in 1926, while 113 items were at least 15 percent lower. This diverse behavior typifies the constant readjustment taking place in prices and while some changes can be attributed to temporary conditions, a considerable proportion undoubtedly reflect basic changes in the appropriate use of resources.

Readjustment was not equally marked for different groups of prices. In chart VII the data of chart VI [11] are broken down into ten separate groups according to administrative and market dominated prices as reflected in frequency of price change.[12] It is evident from the chart that as the role of administration increases, the likelihood of marked readjustments in price diminishes. In the least flexible group of administered prices there are 8 items which showed no price change at all from 1926 to 1929, while, for nearly three quarters of the items, the average price in 1929 was within 5 percent of the average price in 1926. At the other end of the scale, only a fifth of the market-dominated prices averaged within 5 percent of their 1926 prices. The greater diversity of behavior in the market-dominated prices, largely agricultural products or their derivatives, cannot be accounted for wholly by differences in crop conditions between 1926 and 1929. On the whole the marked contrast between the behavior of the market-dominated prices and those showing marked infrequency of price change can only be accounted for by a lower sensitivity to changes in the basic factors—techniques, resources, and wants.

In order to discover if possible the type of prices tending to be least sensitive in their basic adjustment, the 617 items have been regrouped according to several significant categories and the behavior within the separate groups examined. First the separate items were grouped into food, clothing, and other items.[13] The results are given in chart VIII. From the chart it is clear that on the whole food prices are sensitive to changes in the three basic factors, wants, resources, and techniques, clothing prices are intermediately sensitive, while the bulk of the price insensitivity is in other items. The same items are then grouped according to fabrication. Here again, the raw materials are most sensitive, the semifinished less so, and the finished commodities least sensitive. Finally, the items are grouped by durability, the nondurable commodities showing the most sensitivity, the semidurable less, and the durable the least.

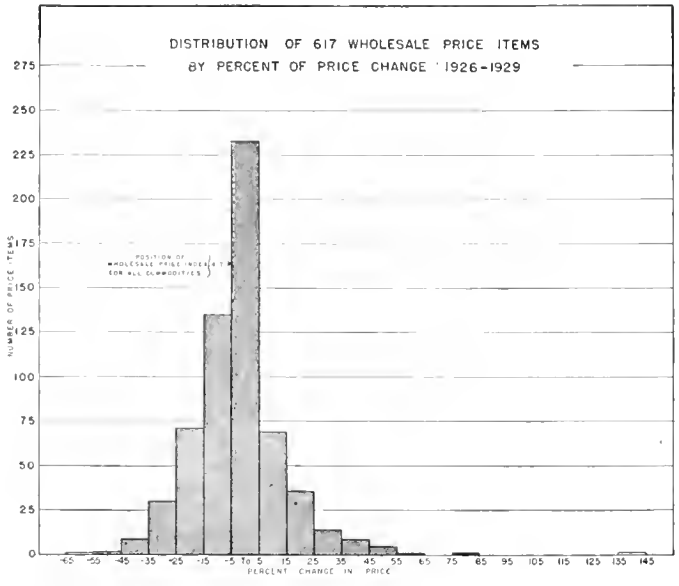
The above analysis suggests that with relatively full use of resources and a relatively stable level of goods prices, the bulk of prices show sufficient flexibility of price to make possible the adjustments to changes in techniques, in available resources and in consumer wants which are required for reasonably balanced use of resources. At the same time it is reasonably clear that there are some groups of items which do not show the requisite flexibility. Even if full use of resources were attained the insensitivity of such items would impede the balanced use of resources. The above analysis also suggests that the items which are insensitive to changes in the basic factors tend to fall among the more highly processed goods and durable goods. These products are particularly associated with the dominance of administrative controls. However, the analysis is based on the frequency of particular types

[10] While the Bureau of Labor Statistics wholesale price index includes 784 items many items are largely duplications, as for instance several butter items. Because of the weighting system used in compiling the index this duplication is in no way detrimental but in the analysis of separate price behavior, this duplication would tend to distort the results except where Bureau of Labor Statistics weighting is also employed. For this reason duplicating items have been dropped according to principles outlined in appendix 2. Also some items have been dropped because the data were incomplete. This reduces the items from 784 to 617. The annual figures used are averages of the monthly data.

[11] The data upon which these charts are based are given in table I of appendix 2.

[12] This follows the procedure used in *Industrial Prices and Their Relative Inflexibility*, by G. C. Means, 74TH Cong., 1st sess., S. Doc. 13.

CHART VI




Source: Based on data given in appendix 2, table I.

[13] The food and clothing categories both include the goods ready for consumption, and the raw materials going into them. See table 1, appendix 2.

of behavior for groups of prices so that no conclusions can be reached as to the sensitivity of particular items. It can point to the types of prices requiring investigation and can suggest the magnitude of this type of insensitivity, but only detailed investigation into the effectiveness with which particular industries are using the available resources could determine that particular prices were a serious impediment to balanced use of resources.

The discovery and elimination of prices which impede the balanced use of resources constitutes one of the continuing functions which need to be performed if effective use of resources is to be attained. It is a function which does not involve the whole economy as a single going concern, but which can be carried out piecemeal, one industry at a time, as techniques for dealing with the problem are further developed and as the need for specific action becomes more apparent. Failure to perform this function may lead to waste and inefficiency in the use of particular resources or to unjustified monopoly profits, but it has relatively little effect on the economy as a functioning machine.

### Sensitivity to Depression and Recovery

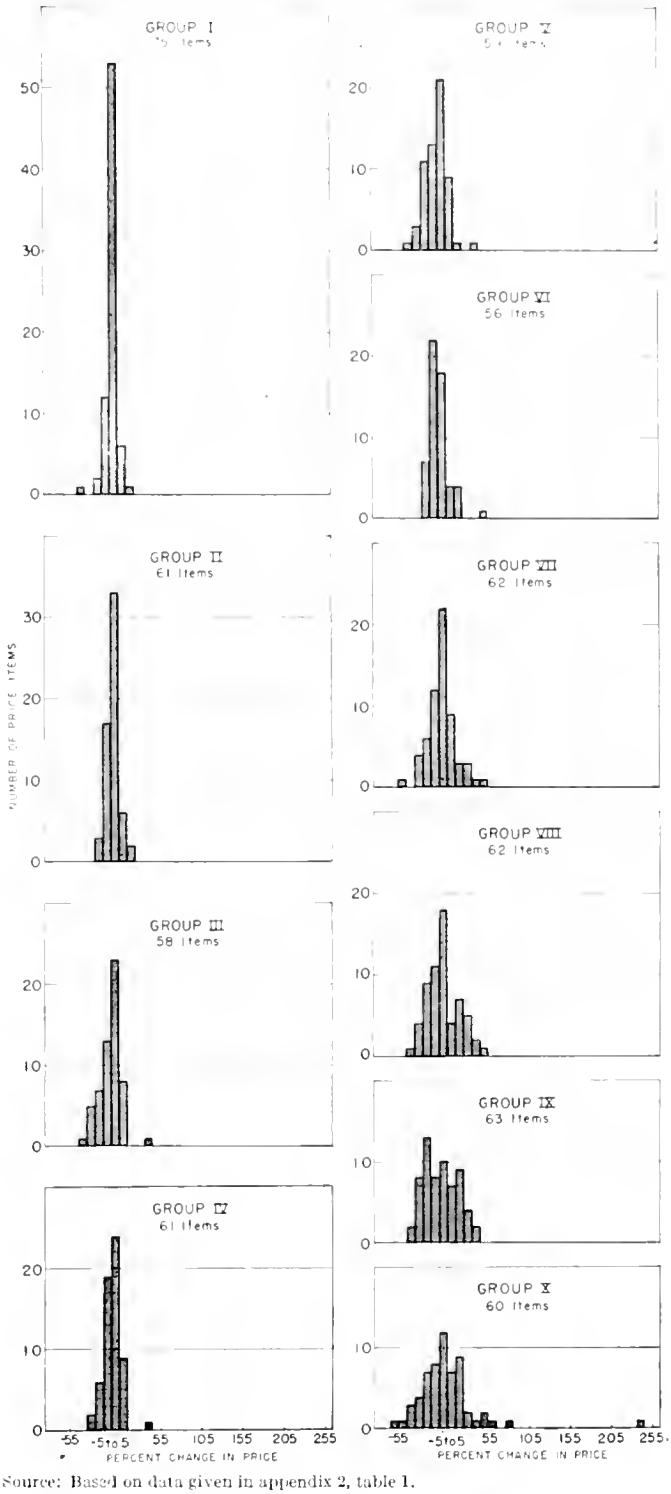
More important for the immediate functioning of the whole economy are the differences in the sensitivity to depression and to recovery displayed by the prices of different goods. The tremendous drop in economic activity between 1929 and 1932 and the large measure of recovery from 1932 to 1937 give a basis for analyzing this type of sensitivity. The quite diverse behavior of particular wholesale prices from 1929 to 1932 is shown in chart IX. There is nothing in the behavior of the individual items that can properly be called typical. Though the wholesale price index dropped 32 percent, a third of the items dropped more than 35 percent while another third dropped less than 25 percent.[14] The same diverse behavior appears in the recovery period and is shown in chart X.

At first glance the diverse behavior of prices in these two periods might appear to be of the same nature as the diverse behavior between 1926 and 1929. Actually, however, the behavior in the depression period is intimately tied to the behavior in the recovery period and appears to involve a specific depression behavior superimposed on the tendency toward price readjustment which operates when resources are more fully employed. On the whole, and with many exceptions, there was a rough tendency for the prices which dropped most from 1929 to 1932 to rise most from 1932 to 1937 while those that dropped least tended to rise least. This is indicated in chart XI which gives the 617 wholesale price items plotted so as to show changes in price in both periods. Each dot represents one item and its distance from the vertical axis represents the fall in price while

CHART VII

WHOLESALE PRICE ITEMS IN TEN FREQUENCY GROUPS DISTRIBUTED BY PERCENT CHANGE IN PRICE, 1926-29

(1926 = 100)

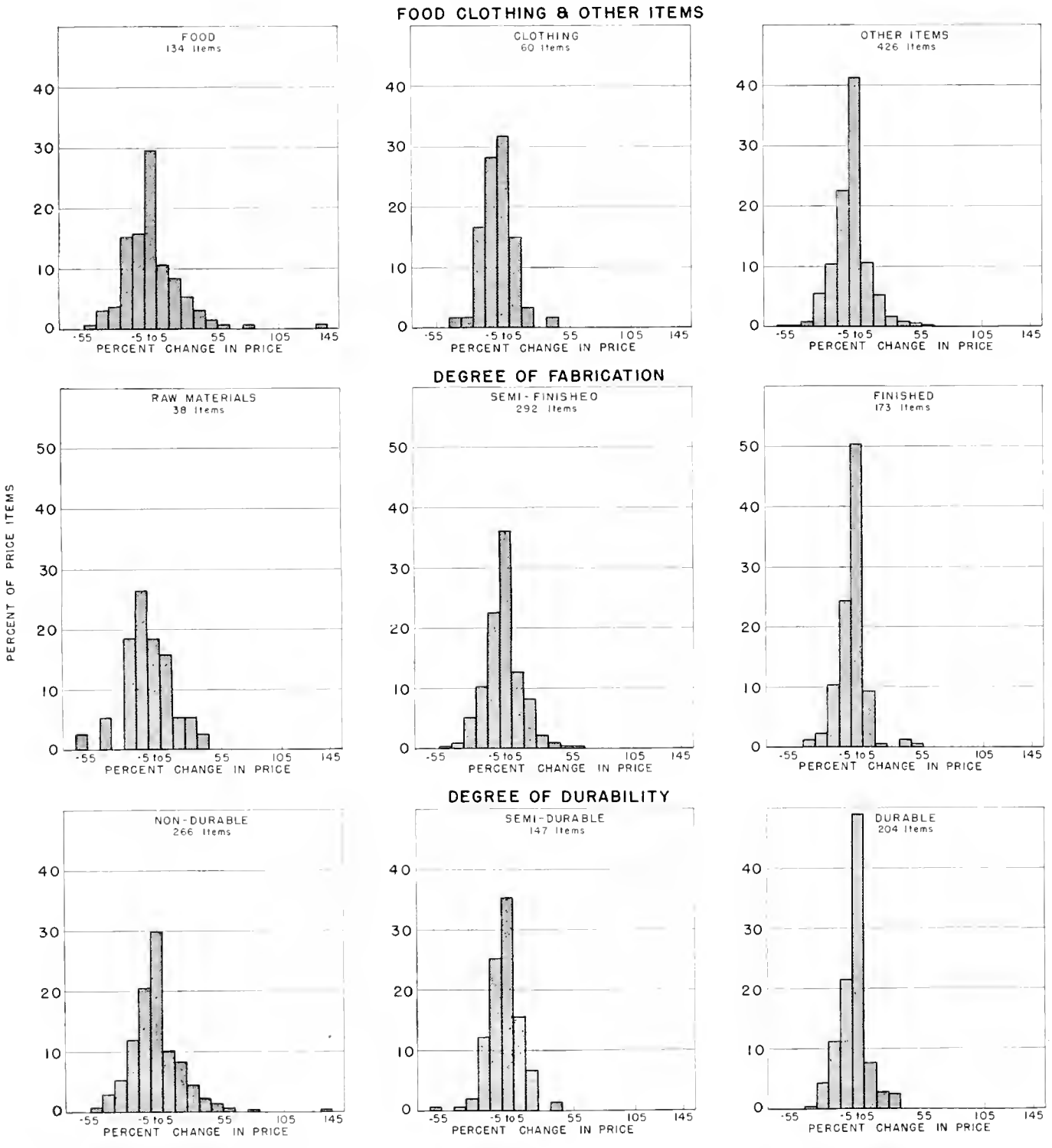



Source: Based on data given in appendix 2, table 1.

[14] If the Bureau of Labor Statistics weights were applied to the individual items, more emphasis would be placed on the more sensitive items.

CHART VIII

GROUPS OF PRICES DISTRIBUTED ACCORDING TO PERCENT CHANGE IN PRICE FROM 1926 TO 1929




Source: Based on data given in appendix 2, table I.

the distance from the horizontal axis represents the rise.[15] Thus if the price of an item dropped 10 points and recovered 10 points (1929 = 100), the point representing it would lie on the line AA′ fairly close to 0. If it dropped 50 points and recovered 50 points, its dot would also lie on the line AA′ but further from the origin. If it recovered more than it dropped, its dot would lie above AA′ and if it recovered less it would lie below the line.

It is clear from the chart that the bulk of prices had not recovered all of their depression drop by 1937. The line BB′ represents the recovery of the wholesale price index. The scatter of the points about the line BB′ suggests that prices which were sensitive to depression influence were also sensitive to recovery influence, on the whole to about the same degree.[16] Similarly, the insensitive prices were on the whole insensitive in both periods.

*Depression sensitivity and character of product.*— This similarity of behavior in both depression and recovery offers the possibility of measuring the sensitivity of individual prices to depression and recovery in a way that largely eliminates the influence of non-depression factors such as were at work between 1926 and 1929. A crude measure can be derived by taking an average of the prices in 1929 and 1937 and using the difference between this figure and the price in 1932 as the drop in price attributable to the depression.[17] The resulting figure gives a better indication of sensitivity to depression than either the drop in price in the first period or the rise in the second period because any change in price in the period not attributable to the depression and recovery is partly averaged out. In the discussion which follows this index of depression sensi-

[15] The changes in both periods are stated as a percent of the 1929 price.

[16] The coefficient of correlation between the depression drop and the recovery rise for the 617 items is 0.51. The size of this figure suggests the existence of an appreciable degree of association between the depression drop and the subsequent recovery rise.

[17] A technically more satisfactory index of depression sensitivity would be one based on the results of associating each price series with an index of industrial activity and a trend factor, but the crude index developed above gives essentially the same results and is used in the text because it can be more easily grasped.

CHART IX

Depression Period, 1929–1932

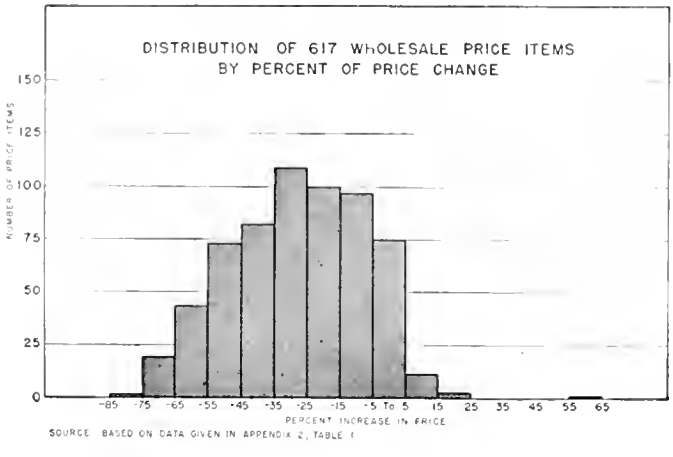



CHART X

Recovery Period 1932–1937

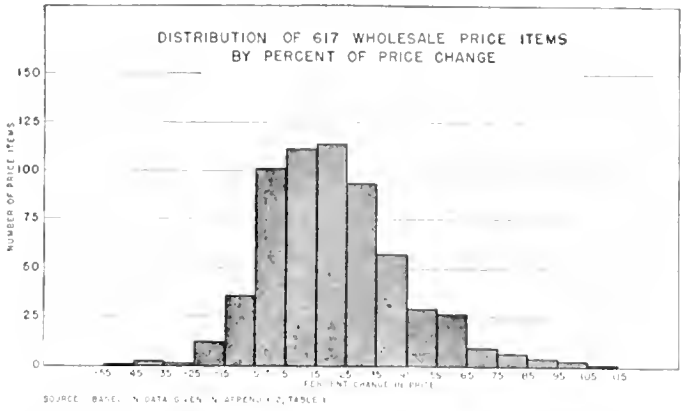
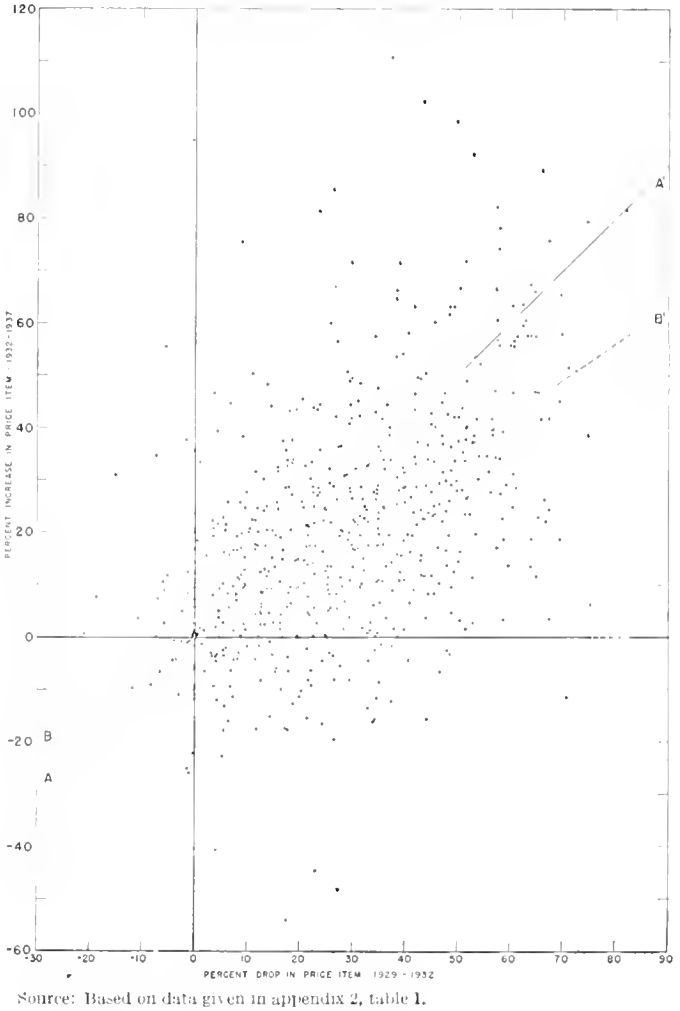



CHART XI

RELATION BETWEEN THE DEPRESSION DROP AND RECOVERY RISE IN 617 WHOLESALE PRICE ITEMS



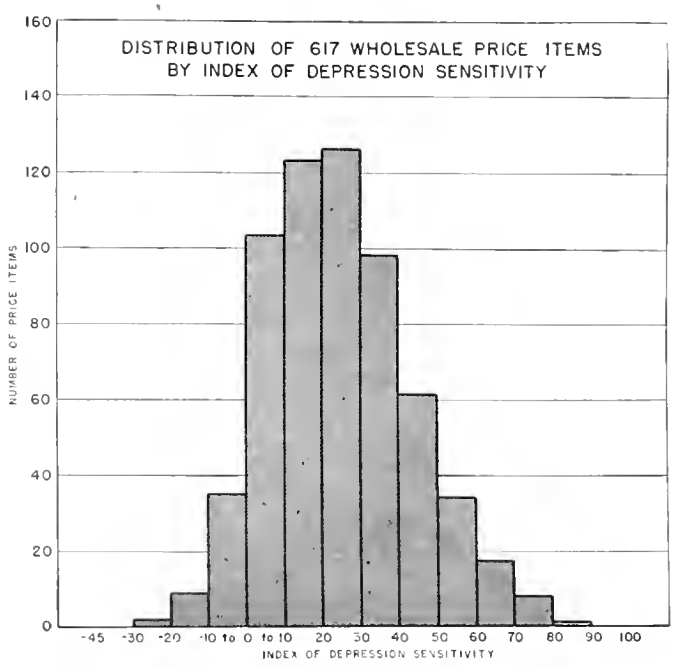

Source: Based on data given in appendix 2, table 1.

tivity will be used, the large values indicating greater sensitivity and the small values indicating lesser sensitivity. A negative index would indicate that the price in 1932 was higher than the average of 1929 and 1937. Chart XII shows the distribution of the 617 items by this sensitivity index.

When this index of sensitivity is used as a tool of analysis, and the depression reactions of different items or groups of items among the 617 wholesale commodities are compared, certain characteristics of the price structure become apparent. For example, the wholesale prices of foods have, on the whole, shown a high degree of sensitivity to depression, clothing a lesser degree of sensitivity, and items other than these two have, as a group, been still less sensitive. Chart XIII gives the items in each of these groups distributed according to the sensitivity of their prices to depression.

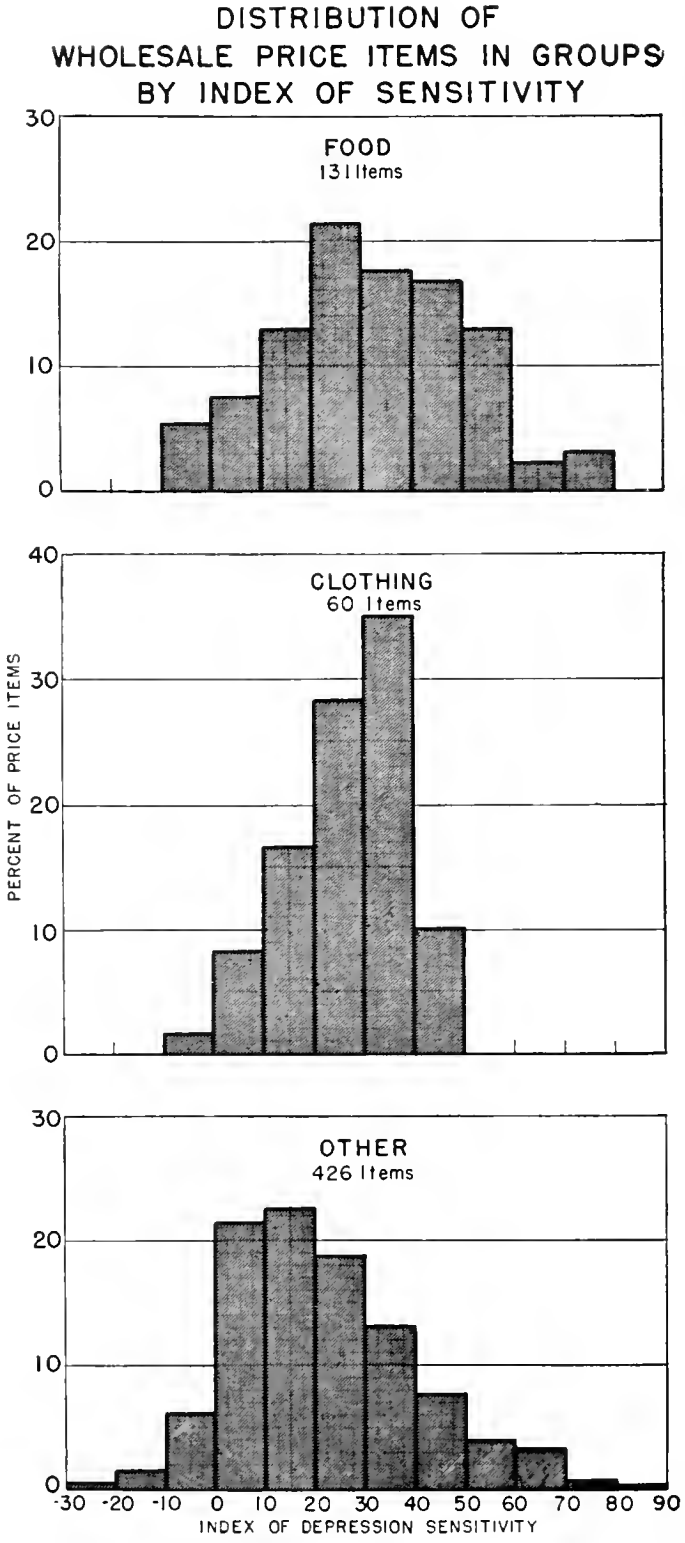
An outstanding characteristic of the price structure is brought out by this type of analysis, namely that on the whole prices are less sensitive as goods move toward the user. In case after case the price of a fabricated product is less sensitive than the price of its raw material. Flour is less sensitive than wheat and bread at wholesale is less sensitive than flour, while bread at retail is least sensitive of all. Cotton yarn is less sensitive to depression than cotton, most cotton cloths are less sensitive than cotton yarn, cotton clothing at wholesale than cotton cloth, and cotton clothing at retail less sensitive still. Series of this type are set forth in table I. Chart XIV shows the tendency toward less sensitivity with more fabrication by comparing the ratio of sensitivity of the later stage to that in the preceding stage. The cases are distributed according to the ratio of the sensitivity at the subsequent stage to the sensitivity of the corresponding item

CHART XII




Source: Based on data given in appendix 2, table 1.

CHART XIII



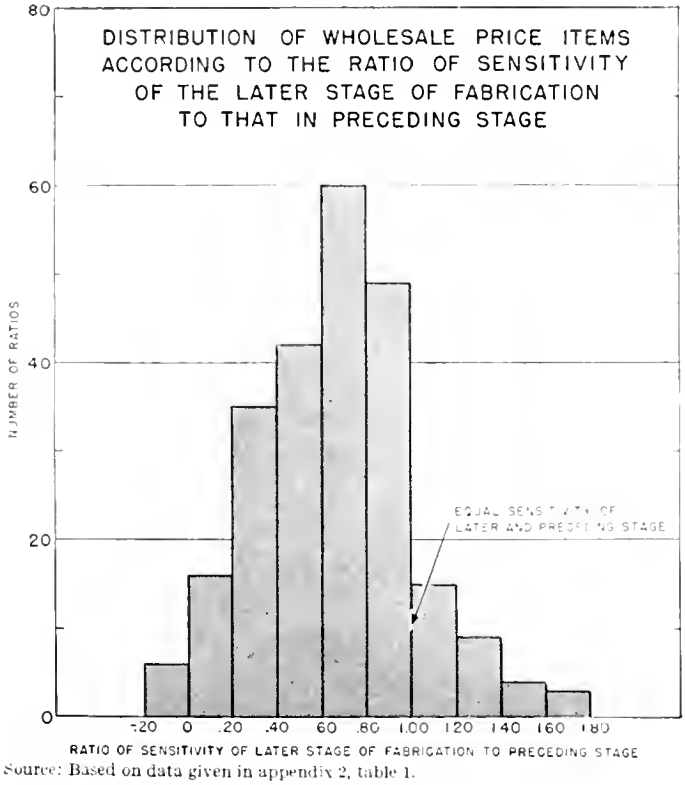

Source: Based on data given in appendix 2, table 1.

at the preceding stage. In 208 cases the subsequent stage showed less sensitivity than the preceding stage and in only 31 cases was price more sensitive to depression in the subsequent stage. A clear example of the latter situation is found in the case of gasoline at wholesale, which shows more sensitivity than petroleum. The case of cold rolled steel is a mixed one, for one raw material, scrap steel, is more sensitive than cold rolled steel, while pig iron, also a raw material for cold rolled steel, is less sensitive. Though there are a few such exceptions, there is a tendency in general toward a gradually increasing insensitivity to depression as the ultimate user is approached.

This same tendency is evident when items are grouped by degree of fabrication, semifinished goods being on the whole less sensitive than raw materials as a group and finished goods being less sensitive than semifinished goods. This is brought out clearly in chart XV which shows the items in each of these groups distributed according to their sensitivity to depression.

When items are grouped by the type of activity which has contributed most to their value, it is apparent that agricultural products, both raw and processed, are most consistently sensitive to depression while goods whose value is largely the product of manufacturing activity tend to be relatively insensitive. Mine and forest products are more diverse in their behavior. This is clearly shown in chart XVI. The division between groups is necessarily somewhat arbitrary. Items are classed as dominantly agricultural when the bulk of their value is farm produced. Thus not only wheat and hogs but also flour and pork are so classed since in each case the value added in processing is a small proportion of the value of the product, 18 and 13 percent respectively in 1929, for the industries as a whole. On the other hand, bread at wholesale is classed as predominantly a manufactured product since only approximately 19 percent of the wholesale value can be attributed to the farm on the basis of the flour, butter, eggs, and milk used in its manufacture. While the classification is necessarily crude, it does involve important distinctions as is evident from the chart. Only 10 percent of the agriculture dominated items show a

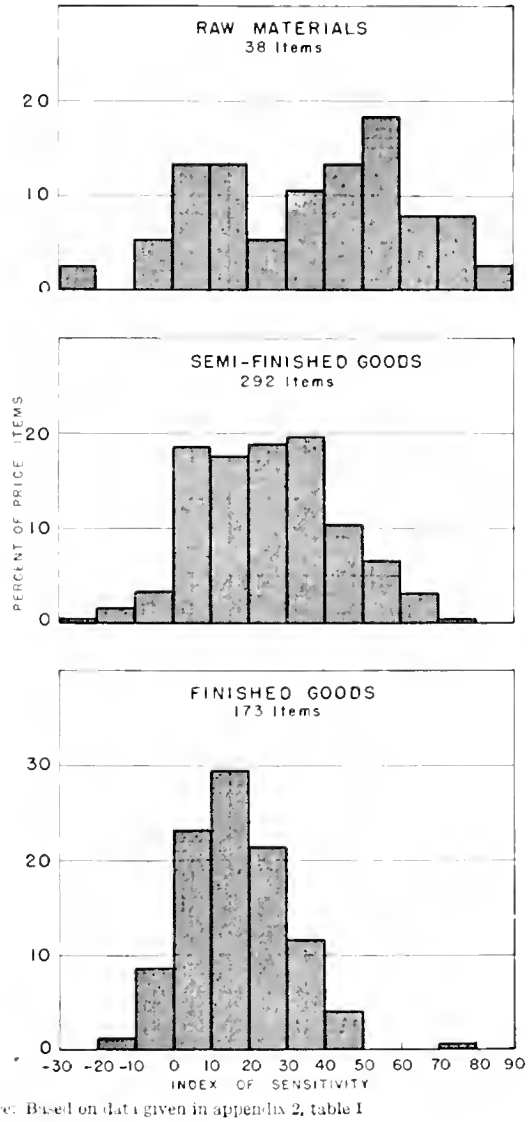
CHART XIV




Source: Based on data given in appendix 2, table 1.

CHART XV

DISTRIBUTION OF WHOLESALE PRICE ITEMS IN GROUPS BY DEGREE OF FABRICATION BY INDEX OF SENSITIVITY

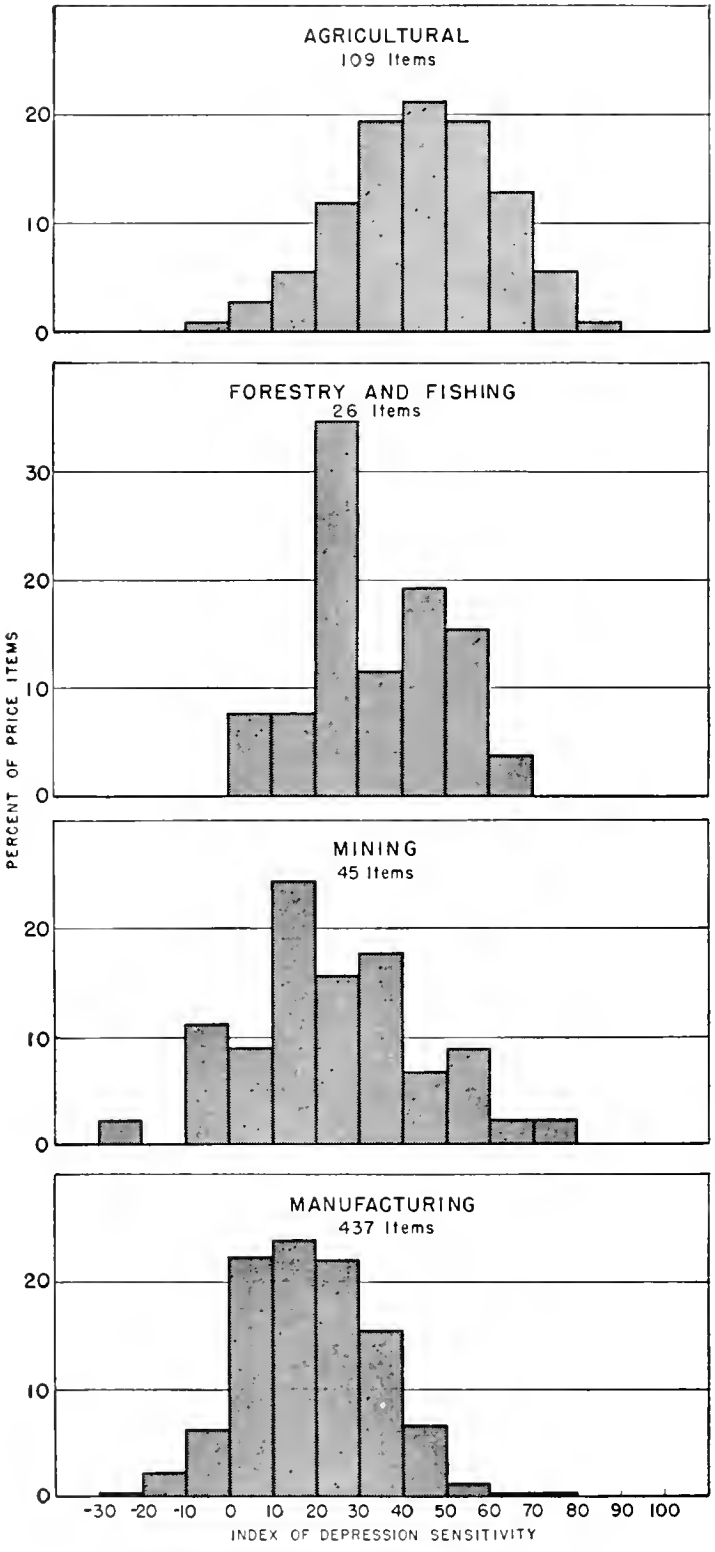



Source: Based on data given in appendix 2, table 1

CHART XVI

## DEPRESSION SENSITIVITY OF WHOLESALE PRICE ITEMS

GROUPED BY TYPE OF ACTIVITY

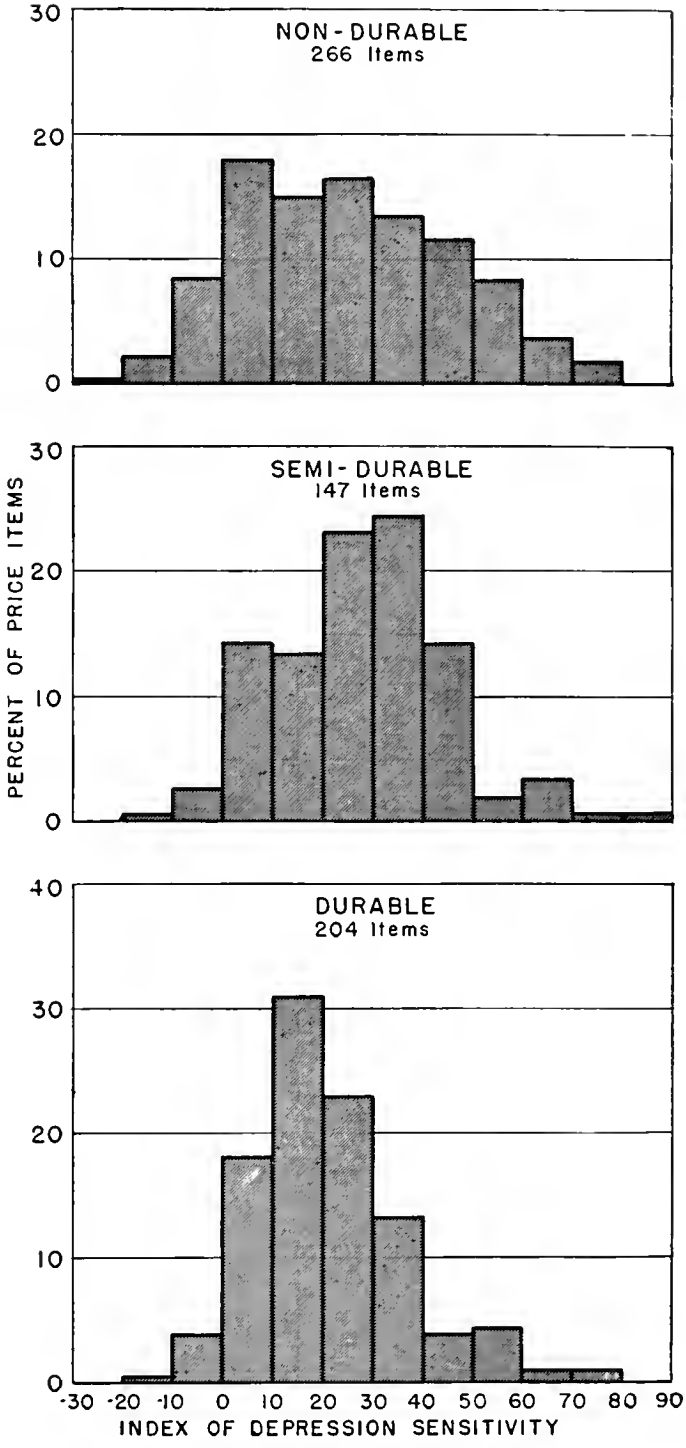



Source: Based on data given in appendix 2, table I.

CHART XVII

## DEPRESSION SENSITIVITY OF WHOLESALE PRICE ITEMS

GROUPED BY DEGREE OF DURABILITY




Source: Based on data given in appendix 2, table I.

TABLE 1.— *Depression sensitivity index of wholesale price items grouped according to degree of fabrication*

| | | | | | |
|---|---|---|---|---|---|
| **FOOD AND TOBACCO** | | | | | |
| Wheat | 54.1 | Wheat flour | 39.6 | Bread (average of 5 cities) | 13.6 |
| Rye | 59.5 | Rye flour | 39.7 | Other wheat products [1] | 18.6 |
| Oats | 52.0 | | | Oatmeal | 42.6 |
| Corn | 71.5 | | | Corn products [2] | 43.1 |
| Corn | 71.5 | Hogs, cattle and sheep | 50.4 | Meat products [3] | 45.8 |
| Oats | 52.0 | | | Hides and skins | 67.6 |
| Alfalfa hay | 39.4 | Poultry | 28.4 | Dressed poultry | 27.1 |
| Other hay | 29.3 | | | Eggs (average of 7 cities) | 30.8 |
| Alfalfa hay | 39.4 | | | Dairy products [4] | 27.5 |
| Other hay | 29.3 | | | | |
| Raw sugar | 18.2 | | | Refined sugar | 15.7 |
| | | | | Molasses | 8.8 |
| Peanuts | 61.2 | | | Peanut oil | 57.8 |
| | | | | Peanut butter | 42.7 |
| Beans | 56.6 | | | Canned baked beans | 27.2 |
| Cocoa beans | 25.4 | | | Powdered cocoa | 11.0 |
| Tobacco | 68.6 | | | Smoking tobacco | 19.2 |
| | | | | Cigarettes | 10.9 |
| **TEXTILES AND LEATHER** | | | | | |
| Cotton | 46.3 | Cotton cloth [5] | 35.9 | Cotton housewares [7] | 32.7 |
| | | | | Cotton knit goods [8] | 25.2 |
| | | | | Men's cotton clothes [9] | 22.5 |
| | | | | Cotton thread, twine and rope | 20.7 |
| Wool (imported and domestic) | 56.8 | Wool cloth [6] | 31.8 | Blankets | 34.9 |
| | | | | Men's and boys' clothing [10] | 32.7 |
| | | | | Carpets [11] | 25.0 |
| Raw silk | 35.6 | Silk yarn, thrown | 31.2 | Silk hose, women's | 32.0 |
| | | Silk yarn (domestic and imported) | 19.3 | Silk hose, men's | 18.1 |
| | | Wood pulp (4 items) | 34.0 | Women's rayon hose | 27.7 |
| | | Rayon | 22.6 | | |
| Hides and skins | 67.6 | Leather (sole and side chrome) | 36.1 | Shoes [12] | 18.4 |
| | | | | Traveling bags and suitcases | 24.2 |
| | | Harness leather | 22.4 | Leather belting | 7.4 |
| | | | | Harness | 10.8 |
| **SOAP, ETC.** | | | | | |
| | | Vegetable oils [13] | 44.3 | Soap (including powder and chips) | 26.0 |
| | | | | Glycerin | 56.0 |
| **PETROLEUM PRODUCTS** | | | | | |
| Petroleum, Oklahoma, California, and Pennsylvania | 28.0 | | | Gasoline [14] | 33.6 |
| | | | | Fuel oil, Oklahoma and Pennsylvania | 41.4 |
| | | | | Paraffin | 39.4 |
| | | | | Kerosene, white and standard | 18.7 |
| | | | | Cylinder oil, Oklahoma and Pennsylvania | 22.2 |
| **RUBBER GOODS** | | | | | |
| Rubber | 81.8 | | | Tires and tubes | 26.0 |
| | | | | Other than tires and tubes [15] | 19.0 |
| **NEWSPRINT, ETC.** | | | | | |
| | | Wood pulp (4 items) | 34.0 | Newsprint paper | 3.0 |
| | | | | Wrapping paper | 0 |
| **LINOLEUM, ETC.** | | | | | |
| Flaxseed | 45.8 | Linseed oil | 42.4 | Linoleum (inlaid and plain) | 19.4 |
| | | Linseed meal | 31.6 | | |
| **CONSTRUCTION MATERIALS, ETC.** | | | | | |
| Portland cement | 17.4 | | | Concrete blocks | 5.0 |
| Sand | 13.6 | | | | |
| Gravel | 12.6 | | | | |
| Mesabi ore | 3.5 | Steel scrap | 66.0 | Bar iron | 13.5 |
| | | | | Malleable castings | 14.0 |
| | | Pig iron | 31.4 | Spiegeleisen | 19.2 |
| | | | | Steel billets | 26.0 |
| | | Foundry iron | 41.6 | Cold rolled steel | 35.6 |
| | | | | Cast iron pipe | 50.7 |
| | | | | Rails | 1 |
| | | | | Wire and wire products [17] | 18.9 |
| | | | | Plates [18] | 19.4 |
| | | | | Skelp, pipe and tubing [19] | 23.6 |
| | | | | Bars [20] | 24.5 |
| | | | | Sheets [21] | 27.0 |
| | | | | Other iron and steel products [22] | 27.0 |
| Copper (electrolytic) | 55.6 | | | Copper wire, rods and sheets | 41.3 |
| Copper | 55.6 | | | Brass wire, rods, tubes and sheets | 37.5 |
| Tin | 61.6 | | | Solder | 56.2 |
| Lead | 47.4 | | | Lead pipe | 35.4 |
| | | | | Babbitt metal | 42.9 |
| Lead | 47.4 | White lead | 9.3 | White paint | 17.5 |

See footnotes at end of table.

TABLE I—Continued

CONSTRUCTION MATERIALS, ETC.—Continued

| | | | |
|---|---|---|---|
| Zinc | 52.8 | Zinc sheets | 16.0 |
| Sulphur | 0 | Sulphuric acid | 1.2 |
| Borax | 12.3 | Boracic acid | 11.6 |
| Sisal | 57.2 | Sisal rope | 20.8 |
| Hemp | 61.2 | Manila rope | 21.6 |
| Jute | 40.6 | Jute yarn | 22.5 |
| | | Burlap | 30.8 |
| | | Binder twine | 28.5 |

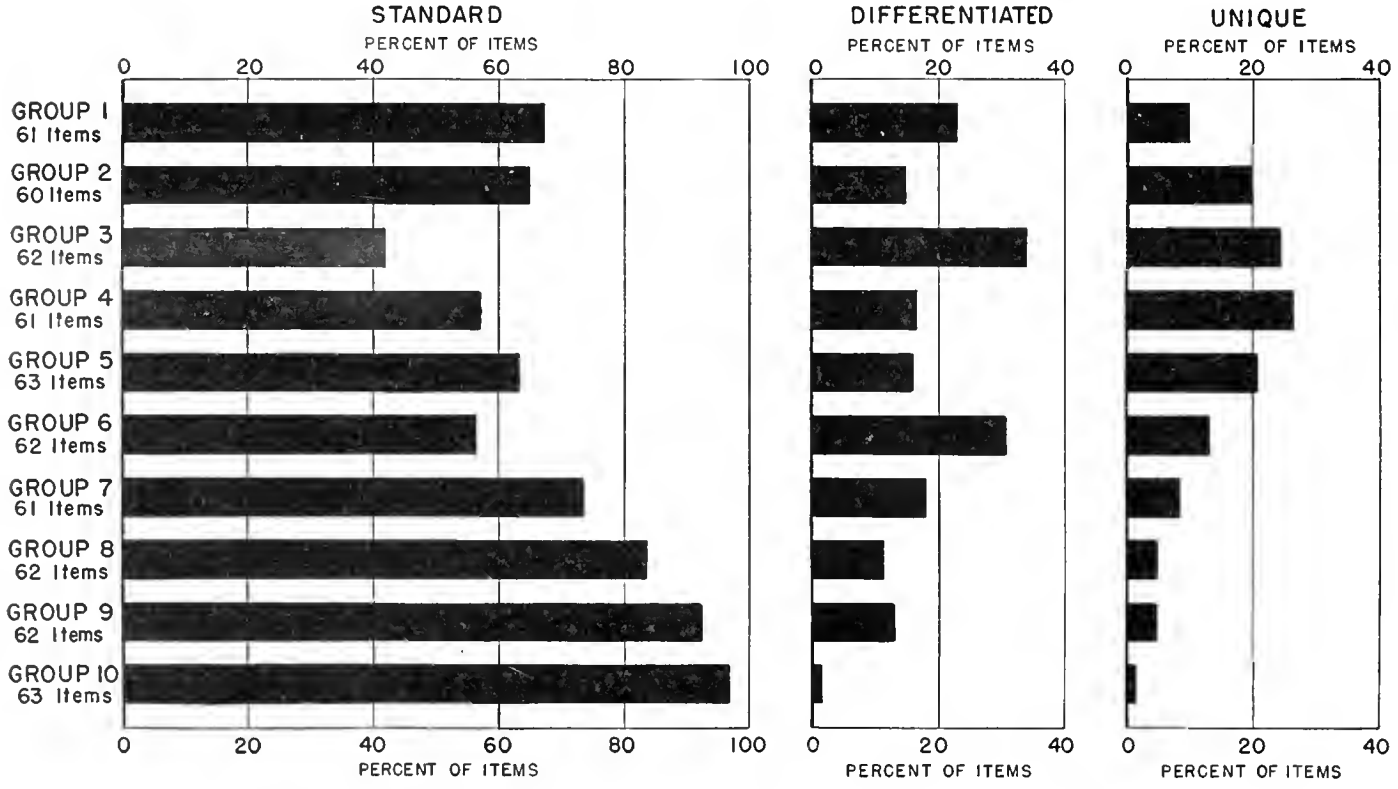
Source: Based on table I, of appendix 2.

NOTE.—Where average indexes are indicated by reference to the footnotes, they are straight arithmetic averages of the sensitivity indexes for the items noted, without any adjustment for relative weight.

[1] Includes soda crackers, pretzels, sweet crackers, macaroni, and wheat cereal.
[2] Includes hominy grits, two items for corn meal, corn oil, corn starch, glucose, laundry starch, and corn cereal.
[3] Includes hogs, cows, steers, calves, sheep and lambs.
[4] Includes items under meats in appendix 2, table I, and oleomargarine, but excludes dressed poultry.
[5] Includes butter, cheese, milk: New York, San Francisco, Chicago; and evaporated milk.
[6] Includes osnaburgs, light drill, print cloth (2 quotations), brown sheeting, ticking, wide duck, denim, heavy drill, flannel beige, bleached sheeting, muslin, sheeting percale, percale, muslin No. 4, gingham, toweling, madras shirting, damask.
[7] Includes cotton blankets, colored cotton blankets, pillow cases, table cloths.
[8] Includes men's cotton hose, women's union suits, men's cotton underwear, and men's union suits.
[9] Includes overalls, soft collars, men's dress shirts, work shirts, men's work trousers, dress shirts, stiff collars.
[10] Includes worsted suiting, uniform serge, heavy overcoating, suiting serge, wool broadcloth, bleached flannel, wool crepe, serge, 7-ounce flannel, Sicilian cloth.
[11] Includes indexes for boys' knickers, top coat (2 quotations), men's 4-piece suits, men's 3-piece suits, boys' 4-piece suits, overcoats, and men's wool underwear.
[12] Includes axminster carpets, Brussels carpets, and Wilton carpets.
[13] Includes the items listed under "shoes" in appendix 2, table I.
[14] Includes coconut oil, palm kernel oil, palm nigr oil, and cottonseed oil.
[15] Includes natural gasoline, Oklahoma and Eastern and California gasoline.
[16] Includes men's rubber heels, rubber hose, men's rubbers and women's rubber heels.
[17] Includes wire rods, wire nails, wire, and woven wire fence.
[18] Includes steel plates, terneplate, and tie plate.
[19] Includes skelp, boiler tubes, galvanized pipe, and sewer pipe.
[20] Includes reinforced bars, cold finished bars, merchant bars, and angle bars.
[21] Includes auto body sheets, steel sheets, annealed sheets, and galvanized sheets.
[22] Includes radiators, galvanized iron tubs, galvanized iron pails, large rivets, plow bolts, steel barrels, merchant bolts, track spikes, tractor bolts, and butts.

CHART XVIII

## STANDARD, DIFFERENTIATED AND UNIQUE COMMODITIES IN TEN DEPRESSION SENSITIVITY GROUPS




Source: Based on data given in appendix 2, table I.

sensitivity less than 20 points while 90 percent show a greater sensitivity than this. Clearly the area of price sensitivity in the national economy is agriculture while manufacturing, except for the processing of agricultural products, is relatively insensitive. The relative insensitivity of retail prices has already been noted.

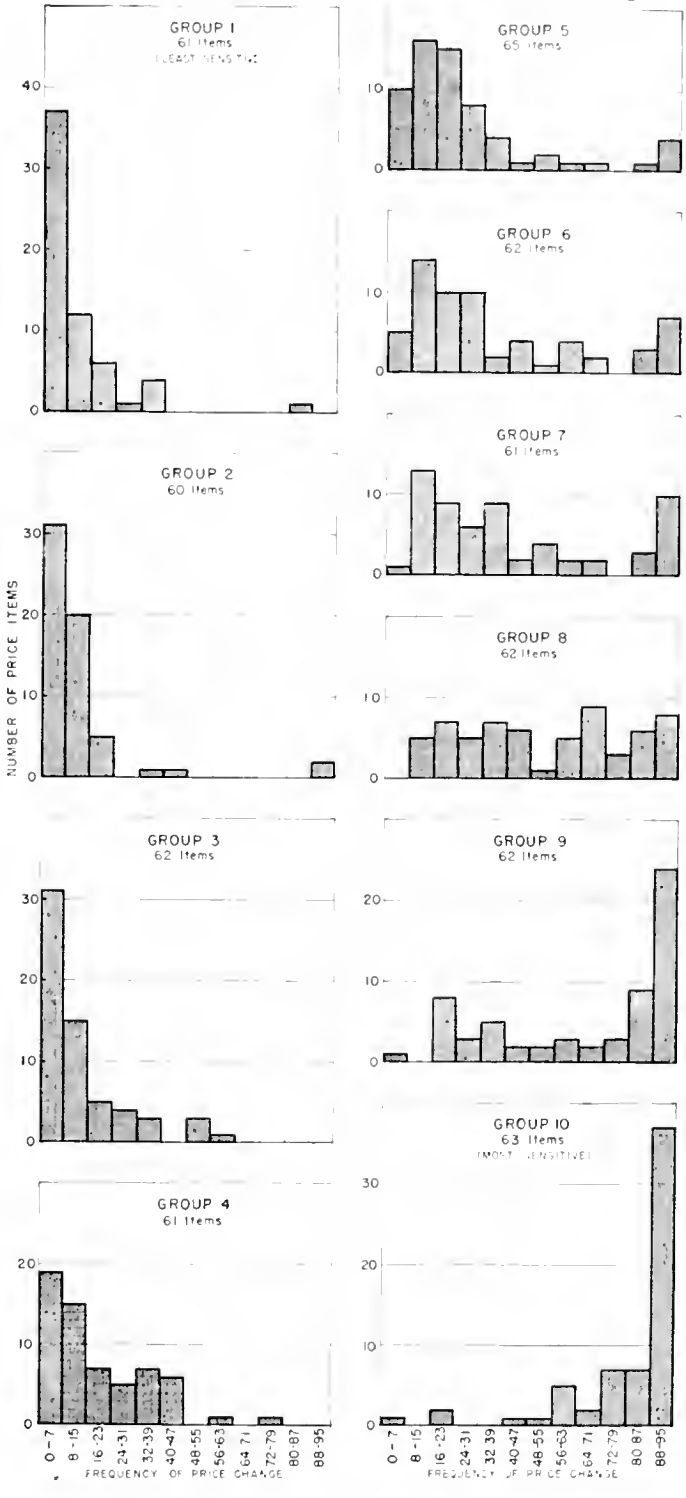
A further light is thrown on the structure of prices by grouping items according to their durability and indicating their depression sensitivity. This is done in chart XVII which makes it clear that the prices of durable are less sensitive than are the prices of semi and non durable goods.

Insensitivity to depression also appears to be associated with the degree of differentiation between the products of different producers. Some goods are so standard that the product of any particular producer is interchangeable with that of many other producers. Once the cotton or wheat farmer has sold his crop it becomes absorbed into the market and ceases to be distinguishable from the cotton or wheat of many other farmers producing the same grade. At the other extreme are the products which are so characteristic of their particular producers that the product of one producer can be clearly distinguished from the product of another. A Ford, a Chevrolet, and a Plymouth are sufficiently distinct from each other physically so that no one should have difficulty in distinguishing them. The product of each auto producer is unique even though the producers compete with each other in meeting the same set of consumer wants. Between the items which are clearly standard and those which are clearly unique lie many borderline cases which may be designated as differentiated. Sometimes the physical characteristics of the product are such as to take the article out of the standard class and yet do not justify classing the product as unique. In other cases the producer, through trade names and advertising, has brought about in the minds of consumers a significant degree of differentiation of his product from that of other competing producers. While no clear cut lines can be drawn between these three types of goods, it is possible to classify commodities roughly into standard, differentiated, and unique.

When goods are so classified, it at once becomes clear that the wholesale prices of standard goods are on the whole more sensitive to depression than the prices of differentiated goods and both are more sensitive than the prices of goods classed as unique. This is brought out in chart XVIII in which the 617 wholesale items are divided into 10 groups according to depression sensitivity and within each group are subdivided to indicate the degree of differentiation. Standard products make up virtually the whole of groups 8, 9, and 10 which contain the items most sensitive to depression. The bulk of the differentiated and unique products appear at the other end of the scale of sensitivity in groups 1, 2, and 3. A large number of standard items, however, were highly insensitive to depression. These are listed in table II.

CHART XIX

FREQUENCY OF PRICE CHANGE
IN TEN DEPRESSION SENSITIVITY GROUPS




Source: Based on data given in appendix 2, table 1.

TABLE II.—*Commodities classified as "standard" in groups 1, 2, and 3 listed according to depression sensitivity index*

[Order of sensitivity from lowest to highest]

| Code No. | Name of commodity | Depression sensitivity index |
|---|---|---|
| 573 | Plaster | −20.6 |
| 658 | Phosphate rock, 68 percent | −20.2 |
| 651 | Potash, iodine | −18.3 |
| 336 | Cotton thread, 6-cord, white, 100 yards | −18.2 |
| 599 | Arsenic, powdered arsenious oxide | −13.5 |
| 661 | Potash, muriate, 80–85 percent K. C. L. | −13.3 |
| 662 | Sulphate of potash, 90–95 percent | −11.3 |
| 646 | Iodine, resublimed | −10.8 |
| 760 | Matches, nonsafety | −10.2 |
| 345 | Coal | −8.8 |
| 644 | Epsom salts, in barrels | −7.1 |
| 598 | Coal-tar products, anilin oil | −6.6 |
| 565c | Glass, plate, polished | −6.1 |
| 761 | Matches, safety | −5.6 |
| 597 | Ammonia, aqua | −5.0 |
| 629 | Soda sulphide, 30 percent crystals | −4.3 |
| 650 | Phenol, carbolic acid | −4.0 |
| 343 | Coal | −3.9 |
| 469 | Aluminum, 98–99 percent | −3.8 |
| 596 | Ammonia, anhydrous | −3.6 |
| 602 | Coal-tar products, benzine | −3.0 |
| 624 | Salt, sodium chloride | −2.2 |
| 344 | Coal | −2.0 |
| 131 | Raisins | −1.4 |
| 536 | Barytes, ground | −.8 |
| 541 | Lampblack | −.6 |
| 653 | Soda phosphate | −.2 |
| 746 | Paper, wrapping, manila, jute | 0 |
| 628 | Sodium silicate, 40 degrees | 0 |
| 587 | Acid, nitric, 42 degrees | 0 |
| 609 | Coal-tar products, black | 0 |
| 590 | Coal-tar products, salicylic acid | 0 |
| 630 | Sulphur, crude | 0 |
| 607 | Calcium carbide | 0 |
| 474 | Nickel elect-cathodes, 98–99 percent | 0 |
| 611 | Coal-tar products, indigo, 20 percent, paste | 0 |
| 585 | Carbon dioxide, liquid | 0 |
| 439 | Rails, steel | .1 |
| 581 | Crushed stone, 1½ inch | .3 |
| 610 | Coal-tar products, brown colors, sulphur | .4 |
| 648 | Opium | .4 |
| 402 | Bar iron, refined, per pound | .6 |
| 544 | Chrome yellow | 1.0 |
| 592 | Acid, sulphuric, 66 degrees | 1.2 |
| 586 | Acid, muriatic, 20 degrees | 1.2 |
| 398 | Angle bars, steel | 1.4 |
| 409 | Boiler tubes, cold-drawn steel | 1.4 |
| 660 | Manure salts, 20 percent | 1.5 |
| 626 | Sodium bicarbonate | 1.6 |
| 176 | Salt, 280-pound barrels | 1.6 |
| 542 | Paint, prussian blue | 1.8 |
| 415 | Sanitary cans, tin | 2.0 |
| 436 | Pipe, steel, galvanized | 2.0 |
| 759 | Cigar boxes, veneer | 2.1 |
| 622 | Soda, carbonate, sal | 2.2 |
| 507 | Cement roofing tile, 9 x 15 inches | 2.4 |
| 744 | Paper, newsprint, rolls | 3.0 |
| 654 | Alkaloids, strychnine | 3.2 |
| 53 | Onions | 3.4 |
| 425c | Iron ore | 3.5 |
| 627 | Soda, caustic, 76 percent | 3.6 |
| 557 | Whiting, imported chalk | 3.7 |
| 537 | Acetate, butyl | 3.8 |
| 608 | Calcium, chloride, 73–75 percent | 4.1 |
| 435 | Pipe, steel, ¾-inch | 4.2 |
| 330 | Artificial leather, 17½ ounces | 4.2 |
| 620 | Potash, caustic, 88–92 percent | 4.5 |
| 772 | Shipping cases, rough, pine | 4.8 |
| 655 | Zinc chloride, granular | 4.8 |
| 497 | Concrete blocks, plain, 8 x 8 x 16 inches | 5.0 |
| 625 | Soda ash, 58 percent | 5.2 |
| 659 | Kainit, 12.4 percent | 5.6 |
| 128 | Currants, dried, 50-pound box | 5.6 |
| 623 | Salt cake, ground | 5.6 |
| 649 | Peroxide of hydrogen, 4-ounce bottle | 6.0 |
| 550 | Lithopone | 6.7 |
| 556 | Turpentine | 6.7 |
| 331 | Artificial leather, 7 ounces | 6.8 |
| 538 | Bone black, powdered | 7.2 |
| 225 | Leather belting, 1 inch | 7.4 |
| 570 | Lime, building | 7.8 |
| 593 | Alcohol, denatured, 188 proof | 8.0 |
| 619 | Oil, pine, distilled | 8.5 |
| 643 | Copperas | 8.6 |
| 545 | Ethyle acetate, anhydrous | 8.7 |
| 543 | Chrome green, light | 8.8 |
| 171 | Molasses, per gallon, average sugar content | 8.8 |
| 595 | Aluminum sulphate | 8.9 |
| 132 | Bananas | 9.0 |
| 663 | Soda, nitrate, chili saltpeter | 9.2 |
| 558 | Zinc, oxide | 9.3 |
| 548 | Lead, carbonate, white, in oil | 9.3 |
| 635 | Citric acid, crystals | 9.6 |
| 337 | Shoe thread, linen, per pound, 10's | 9.8 |
| 638 | Alkaloids, caffeine | 9.8 |
| 423 | Locks, 3½-inch sets | 11.2 |
| 540 | Iron oxide, black | 11.3 |
| 43 | Milk, 3.5 percent | 11.4 |
| 584 | Acid, boric | 11.6 |
| 571 | Lime, hydrated | 11.8 |
| 604 | Borax, crystals, granulated | 12.3 |
| 346 | Coal | 12.3 |
| 603 | Bleaching powder | 12.5 |
| 632 | Coal-tar product, toluene | 12.5 |
| 598 | Wall tile, glazed | 12.6 |
| 569 | Gravel, ton | 12.6 |

Source: Based on appendix 2, table I. The code number given for each item in this and subsequent tables refers to the code number attached to the particular item by the Bureau of Labor Statistics.

*Depression sensitivity and degree of administrative control.*—Insensitivity to depression is thus clearly associated with a number of factors, closeness to the ultimate user, high degree of fabrication, manufacturing activity, durability, and a high degree of product differentiation. Such insensitivity is also closely associated with the degree to which prices are dominated by administration. In chart XIX the wholesale-price items are divided into 10 groups according to their depression sensitivity and the frequency of price change is indicated. There is a clearly marked progression from the highly insensitive prices in group 1 which change infrequently to the highly sensitive prices in group 10 which change with great frequency.

*Depression sensitivity and tariffs.*—One more factor needs to be considered, the possible effect of tariffs upon price sensitivity. The 617 wholesale items were classified according to the ratio of the tariff rates on each item to the average of the American wholesale price from 1930 to 1936. The results of this classification compared with depression sensitivity are shown in chart XX. Again the items are divided into 10 sensitivity groups and distributed within each group according to the magnitude of the tariff. From this chart it is clear that there is no general relation between insensitivity to depression and amount of tariff. Over 24 percent of the items in the insensitive groups 1, 2, and 3 are without tariff protection while only 16 percent of the items in the most sensitive groups 8, 9, and 10 are without tariff protection. If anything, the sensitive items appear to have somewhat more tariff protection than the insensitive items. This does not mean that the tariff does not contribute to the insensitivity of certain items but it does mean that the tariff is not a major explanation of price insensitivity. How account for the differential sensitivity of prices to depression?

### Basic Factors in Depression Insensitivity of Price

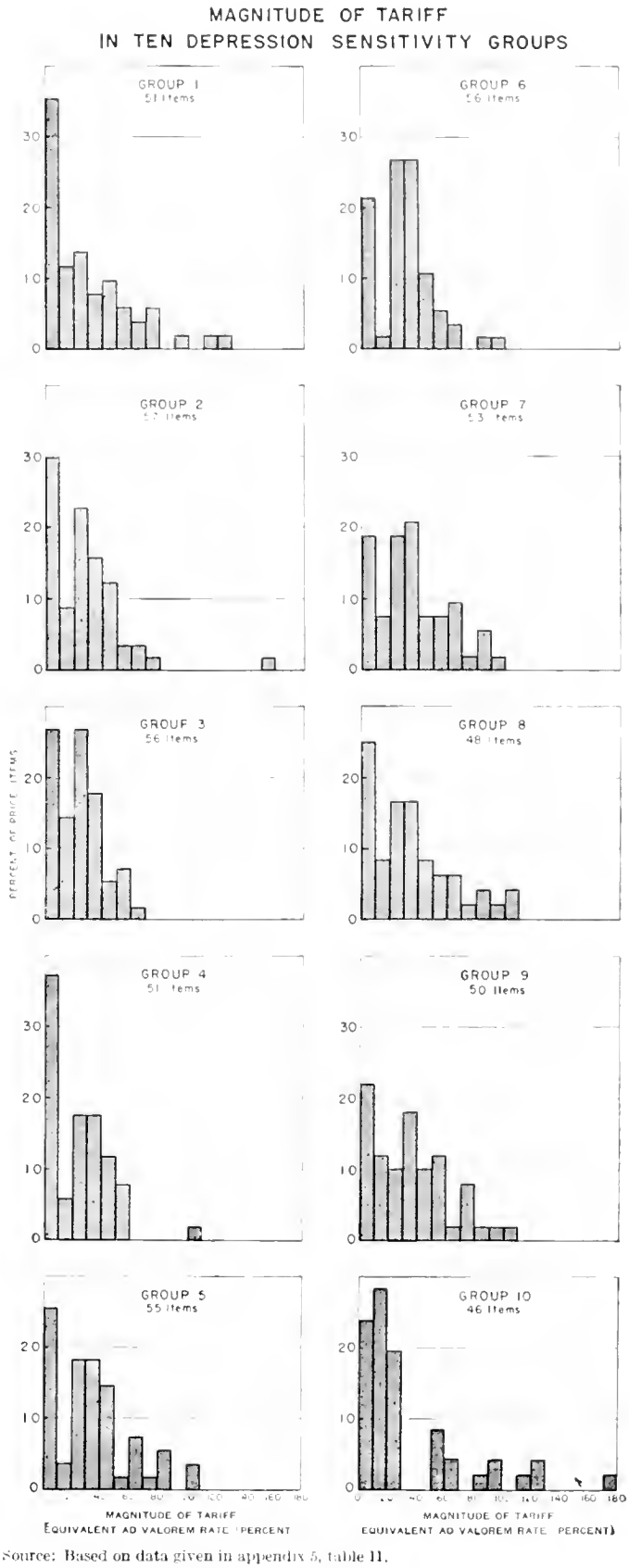
In the preceding paragraphs the wide differences in the sensitivity of prices to depression has been indicated

and an attempt has been made to relate the degree of sensitivity to different characteristics of goods on the market. Depression sensitivity has been found to be associated, on the whole, with raw materials, with agricultural products, with market-dominated prices, with nondurable goods and with standard commodities. On the other hand insensitivity to depression, on the whole, has been found to be associated with fabricated products, with manufactured goods, with administration dominated prices, with durability and with differentiated products. Because of the effect of this differential sensitivity in disorganizing economic activity, it is important to discover, if possible, what forces lie back of it. To find price insensitivity associated with one set of factors and sensitivity associated with another set does not give an adequate explanation of what brings about this differential sensitivity. It is still necessary to seek explanations of this behavior. Can insensitivity be accounted for by the closeness of goods to the ultimate user; by the fact that they are manufactured products; by durability; by product differentiation; or by administrative controls? Or is the explanation to be found in a combination of several of these factors?

Attempts to answer this question have, up to the present, produced divergent explanations and the question is still moot. Yet the accumulating evidence appears to point to administrative controls as the dominant explantion. This is the generally accepted explanation of the insensitivity of prices set by government and of prices set through public utility regulation. There is an increasing literature discussing the theoretical possibility that, when the number of independent and competing producers supplying a particular market is relatively small, administrative controls over price may be exercised without any collusion between separate enterprises and without a single producer dominating the market.[18] The material which follows indicates that the exercise of administrative controls over price can account for most of the cases of depression insensitivity which have been included in the data already presented.

*Relation of monopoly profits.*—Before proceeding to examine the evidence of administrative controls, it is necessary to give clear warning against confusing the presence of administrative controls over price with the presence of monopoly profits.[19] In a particular case the administrative control over price may be sufficient to

CHART XX




Source: Based on data given in appendix 5, table 11.

[18] Cf. Edward G. Chamberlin, *Theory of Monopolistic Competition*, Cambridge, 1933; Joan Robinson, *Economics of Imperfect Competition*, London, 1933.

[19] Much confusion has arisen in economic discussions because of different meanings attached to the terms competition and monopoly. In earlier discussions the term "monopoly" was used on the whole to refer to situations in which sufficient control would be exercised over price by an individual producer or by a colluding group of producers to make possible monopoly profits, i. e., profits above the rate necessary to induce new investment in other industries not subject to monopoly control. A situation was in general classed as competitive if there was insufficient control over price to make monopoly profits possible. Economists, lawyers, and laymen adopted meanings of this general character for the two terms "monopoly" and "competition."

allow monopoly profits to be made. But in innumerable cases where there is some measure of administrative control over prices, there is not the opportunity to make monopoly profits. The bulk of retail distribution is carried on with administered prices. In fact, the one-price system of buying and selling by which prices remain constant over periods of time is one of the major elements contributing to the efficiency of American retail distribution. Yet in spite of the significant degree of control over price on the part of the individual enterprise, which this system reflects, the bulk of retailers are surely not making significant monopoly profits. Similarly, in manufacturing industries a large number of products are sold at a listed or posted price less standard discounts and the price is altered occasionally by altering the discounts or by revising the listed or posted price.[20] Yet in a large number of these cases of administrative control over price, probably in the bulk of them, there is no problem of monopoly profits. In many cases of administered prices the enterprises are actually operating at a loss. Thus it must be clear that administrative control over prices does not necessarily involve monopoly profits. Rather, monopoly profits can arise only in the more extreme cases of administrative control or under special conditions. Whether or not administrative controls over price are sufficiently strong to allow the making of monopoly profits, these controls are important factors affecting the relative sensitivity of prices to depression and the problem of whether resources will be used to the full. On the other hand, only those administrative controls over price which are sufficiently strong to allow the making of monopoly profits are significant to the long-run problem of securing a balanced use of resources. Once administered prices as such are distinguished from monopoly profits as such and the former are recognized as a normal way of doing business, it should be possible to examine the problem of administration in relation to the depression sensitivity of prices in an analytical fashion.

*Relation to consumer wants.*—A possible explanation of the difference in the depression sensitivity of different prices could theoretically be found in the different importance attached by consumers to different goods. Thus the fact that the price of a particular good failed to decline significantly during the depression might be explained by the fact that consumers required the particular item so strongly that they continued to buy it in much the same volume even though their money incomes were curtailed by the depression. With no significant decline in the volume of sales there would be no particular pressure for a decline in price. On the other hand there would be a fall in the sale of items whose purchase could be postponed by the consumer or that were less significant to his standard of living. If there were no administrative control of price directly or through a restriction of production, the prices of such items could be expected to fall in relation to the items that were more indispensable to the prevailing standard of living. Thus the price of food which is essential to living might be expected to be insensitive to depression, while the price of clothing would be more sensitive and the price of such postponable items as automobiles and agricultural machinery would be the most sensitive to depression.

In actual experience the exact reverse appears to have been the case. In the depression, there was a general tendency, though with many exceptions, for the industries whose sales dropped most to show relatively little price readjustment, while in the industries in which a major price readjustment took place, there was a tendency for consumption to drop least.[21] Likewise, in the recovery period, the industries whose sales were increasing most showed little price rise while those with the least rise in sales showed the greatest rise in price. This behavior is typified in chart XXI which indicates the depression changes in price and in production for each 10 industries which together produce approximately half of the value of products of all manufacturing

More recently a group of technical economists have redefined the terms monopoly and competition to refer to the elements in a situation rather than to the situation itself. On this basis a particular situation can have some monopoly elements and some competitive elements. Moreover, it is difficult to conceive of a case in practice, however competitive, which did not involve some monopoly elements or however monopolistic which did not involve some elements of competition. Both the retail store keeper and the wheat farmer, through monopolizing a piece of land, are to some extent monopolists while the monopolized post office has to compete with other forms of communication. If the bulk of economic technicians classify every situation as both monopolistic and competitive regardless of whether there is power to make monopoly profits while the laymen continue to classify situations on the basis of the older meanings of the terms, only confusion can result. For this reason the terms are avoided in this report except where no confusion is likely to arise. The term "monopoly profits" is used because it is believed to involve no ambiguity as to its general meaning, though the determination of monopoly profits in any concrete situation has its serious difficulties.

[20] It is well worth noting that much of the pressure for price regulation in the National Recovery Administration was aimed against special discounts to particular buyers which departed from the list price less standard discounts. The Robinson-Patman Act makes illegal the discrimination among buyers involved in special discounts arrived at by bargaining and thereby makes administered prices almost mandatory in this part of the economy.

[21] In the National Industrial Conference Board Bulletin, February 20, 1939, the claim is made that this conclusion has not much practical value because the relation between changes in price and production for *individual commodities* is much more heterogeneous than for *whole industries*.

The evidence presented in the bulletin shows that *even for individual commodities* there is a clearly marked tendency, with of course many exceptions, for a drop in production between 1929 and 1933 to be associated with a smaller drop in prices and a large drop in prices to be associated with a small drop in production. This tendency is clearly indicated in the attached table which was compiled directly from the bulletin

*Number of items listed in NICB Bulletin falling into different categories of price and production change between 1929 and 1933*

| | With production drop of | | |
|---|---|---|---|
| | More than 50 percent | 25 to 50 percent | Less 25 percent |
| Items with price drop of less than 25 percent | 40 | 25 | 18 |
| Items with price drop of 25 to 50 percent | 23 | 26 | 29 |
| Items with price drop of more than 50 percent | 11 | 24 | 68 |

and agricultural enterprises. It is evident that the relative stability of the prices of agricultural implements, automobiles, and steel between 1929 and 1932 was not due to stability in the demand for the product, and that the relative instability of the prices of textile products, food, and agricultural commodities was not due to the instability in the demand for the product. Thus differences in the stability of the demand for particular products does not appear to be the primary explanation for the differences in price sensitivity.[22]

*Relation of the degree of fabrication.*—Likewise the difference in degree of fabrication does not appear, in itself, to be the primary explanation of differences in price sensitivity. The prices of most raw materials, but not all, are nonadministrative in character, and most,

If the group of chemical and drug items for which the price data are known to be very unsatisfactory and for many of which there are *no comparable data* on the production of individual items for the years 1929 and 1933 in the sources used in the bulletin study, are excluded the relationship is even more clearly brought out as indicated in the table below:

*Number of items listed in NICB Bulletin other than chemicals and drugs falling into different categories of price and production change from 1929 to 1933*

| | With production drop of— | | |
|---|---|---|---|
| | More than 50 percent | 25 to 50 percent | Less than 25 percent |
| Items with price drop of less than 25 percent | 38 | 18 | 8 |
| Items with price drop of 25 to 50 percent | 22 | 18 | 24 |
| Items with price drop of more than 50 percent | 9 | 22 | 66 |

When, as in this report, the analysis is made in terms of industries instead of individual commodities the influence of special factors which effect the price and production relationships for particular commodities tends to be partially offsetting and the basic general factors tends to dominate the relation between price and production. Examination of the data provided by the National Industrial Conference Board brings out the striking extent to which, for industries as a whole, there is a clearly defined tendency, with exceptions, for *industries* showing a large drop in production between 1929 and 1933 to show a small drop in prices and industries with a small drop in production to show a large drop in prices.

[22] This same analysis can be stated in technical economic terms. The trained economist speaks of a demand curve which indicates the amount of a given commodity which a consumer or group of consumers will buy at each of a series of different prices if they have a given volume of income (stated in terms of its real buying power) and if the prices of other commodities are assumed the same. He also speaks of a shift in the demand curve which may result from a change in the volume of consumer income. This means that with a change in consumer income there will be a change in the volume of the particular commodity demanded at each level of its price. For most commodities an increase in income will involve an increase in the volume demanded at each given price so that when a demand curve at one level of income is plotted with standard coordinates and price indicated along the vertical axis, the demand curve corresponding to a higher level of income will be above and to the right of the first curve and the curve corresponding to a lower level of income will fall below and to the left of the initial curve.

If the difference in the relative depression sensitivity of prices for different items were due primarily to the structure of consumer wants, it would be expected that the items with insensitive prices would tend to be those with highly elastic demand curves and/or with demand curves showing little sensitivity to changes in consumer income. This would include the nondurable basic necessities such as food and to a less extent clothing. Conversely, items with a high degree of depression sensitivity in price would be those such as automobiles and other durable consumer goods which have an inelastic demand curve, a demand curve highly sensitive to depression, or a combination of both. Since food as a whole, and to a less extent clothing, show depression sensitivity in price and durable consumer goods show a considerable degree of depression insensitivity of price, the differential price sensitivity cannot be attributed to the structure of wants.

Such a conclusion should not be confused with the conclusion that where an individual business is in a position to control its price to a greater or less extent, there is less business inducement to lower price where the demand curve for the product is inelastic than where it is elastic.

TABLE 111.—*Raw material commodities classified according to order of depression sensitivity*

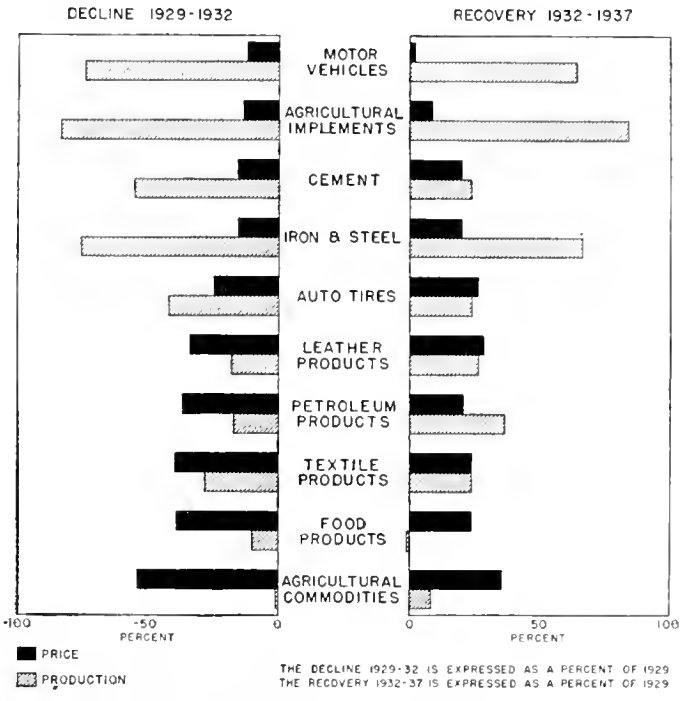
[Order of sensitivity from lowest to highest]

| Code No. | Name of commodity | Depression sensitivity index |
|---|---|---|
| 658 | Phosphate rock | −20.2 |
| 469 | Aluminum | −3.8 |
| 536 | Barytes | −.8 |
| 630 | Crude sulphur | 0 |
| 581 | Stone, crushed | .3 |
| 425c | Mesabi ore | 3.5 |
| 557 | Whiting | 3.7 |
| 663 | Sodium nitrate | 9.2 |
| 346 | Soft coal, mine run | 12.3 |
| 569 | Gravel | 12.6 |
| 579 | Sand | 13.6 |
| 348 | Soft coal, screenings | 13.6 |
| 546 | Copal gum | 24.0 |
| 40c | Hay | 29.3 |
| 50 | Timothy seed | 34.0 |
| 269c | Raw silk | 35.6 |
| 476 | Mercury | 37.4 |
| 39 | Alfalfa hay | 39.4 |
| 329 | Jute | 40.6 |
| 49 | Flaxseed | 45.8 |
| 24c | Cotton, middling | 46.3 |
| 42 | Hops | 47.4 |
| 161 | Copra | 47.9 |
| 4 | Oats, No. 2, white | 52.0 |
| 47 | Alfalfa seed | 52.2 |
| 488 | Zinc pig | 52.8 |
| 59c | Wool, domestic | 53.1 |
| 6c | Wheat | 54.1 |
| 1 | Barley, malting | 55.2 |
| 5 | Rye, No. 2 | 59.5 |
| 65c | Wool, foreign | 60.4 |
| 551 | China-wood oil | 61.8 |
| 445 | Steel scrap | 66.0 |
| 2c | Corn | 71.5 |
| 38 | Clover seed | 72.4 |
| 470 | Antimony | 73.9 |
| 751c | Rubber, crude | 81.8 |

Source: Based on data in appendix 2, table 1, National Resources Committee classification.

CHART XXI

PRICE AND PRODUCTION CHANGES DURING DEPRESSION AND RECOVERY FOR 10 MAJOR INDUSTRIES




Source: See appendix 1B, section 22.

but not all, raw materials show relative price sensitivity. When a comparison is made between the raw materials showing the greatest and those showing the least price sensitivity during the depression, the effect of administration is apparent. In table III all of the items from the Bureau of Labor Statistics list which are raw materials requiring fabrication before use are listed according to their depression sensitivity. At the bottom of the list, showing most sensitivity, are the agricultural products each with hundreds of thousands of separate producers, steel scrap gathered from thousands of sources and the metals utilizing copper, tin, and zinc. At the very top of the list, showing little or no downward adjustment to depression conditions, are iron ore, aluminum, crude sulphur, phosphate rock, barytes, and crushed stone, the production of each of which is dominated by a few companies.[23] It seems clear that raw materials as a group are sensitive in price not so much because they are raw materials as because so many of them are produced by a very large number of producers under conditions in which no individual producer can affect the price by limiting his own production. In the few cases where the production of a raw material is dominated by a few producers the prices show as great insensitivity as products other than raw materials.[24]

A similar comparison for semifinished and finished goods has been attempted. The analysis is complicated, however, by the influence of the sensitivity in the raw materials where these make up a large part of the value of the product. Thus the price of beef is dominated by the price of cattle so that the depression sensitivity of the price of cattle is transferred in large part to the price of meat, and a comparison between the sensitivity of meat prices and concentration in the meat packing industry is misleading. The appropriate comparison would be between concentration in the packing industry and packers' margins—the difference between the price of the steer on the hoof at the stock yards and the sum of the wholesale prices of the separate parts after the packing process has been completed. This packers' margin is the real "price" paid for the function of meat packing. In order that price comparisons among semifinished and finished goods may have validity they have been limited to products whose value is derived predominantly from manufacturing activity and only to a secondary degree from the raw material used in production.

A further problem arises from the fact that the available figures on manufacturing concentration are of national scope and apply to rather broadly classified industries. This means that their significance as indexes of concentration in relation to the market is limited to industries in which the bulk of the producers have access to a national market. Fresh bread, for example, is necessarily produced for a relatively local market while the weight of cement prevents plants at one end of the country from supplying markets at the other end in an economical fashion. In these industries, figures on concentration for the country as a whole cannot throw light on the actual degree of concentration existing in particular markets. Likewise the broad census classification often combines a variety of distinct industries under one classification.

In order to avoid these various difficulties, the list of census industries has been reduced by a crude classification to those industries which are relatively homogeneous in product, where at least a third of the value of the product is believed to come from manufacturing activity, where the product itself was believed to be produced for a national or international market and where reasonably reliable data were available as to the price of the product. Thirty-seven census industries met this requirement. When the depression drop of prices in these industries is compared with the proportion of value product in each which was produced by the four largest enterprises, a rough relation is apparent between concentration and price insensitivity. This is indicated in chart XXII. As in the case of raw materials, the semifinished and finished goods which are less sensitive appear on the whole to be those whose production is dominated by a relatively few enterprises.

The durability of goods is often offered as an explanation of the depression insensitivity of prices. It has already been shown that there is a tendency for durable goods as a group to be less sensitive than nondurable goods. However, when the individual items are compared it at once becomes clear that the durable goods whose production is relatively unconcentrated are highly sensitive and that it is only the concentrated durable goods whose prices are insensitive, just as are the prices of concentrated nondurable goods. The tendency for nondurable goods as a group to be sensitive and durable goods as a group to be more insensitive appears to reflect the agricultural character of a large proportion of the nondurable goods and the very large number of producers supplying such products. This is brought out in table IV which gives all the durable and nondurable goods among the 617 wholesale items which showed an extremely high sensitivity (greater than 50) or an extremely low sensitivity (less than 10) arranged in order of increasing sensitivity.

Among the basic durable materials, such items as steel scrap, lumber, copper, and tin which are available from many sources, show a high degree of price sen-

[23] Crushed stone production is not dominated by a few companies for the country as a whole but production is mostly for very local consumption and in most localities crushed stone production is dominated by one or a few companies.

[24] Copper is a significant exception. The bulk of copper is mined in the United States by a few companies. The flexibility of copper prices appears to be due to the direct competition of foreign producers, particularly the African mines, and to the availability of supplies of reclaimed copper.

TABLE IV.—*Durable and nondurable wholesale price items showing a depression sensitivity index of greater than 50 and less than 10*

DURABLE ITEMS

| High sensitivity (index greater than 50) | | | Low sensitivity (index less than 10) | | |
|---|---|---|---|---|---|
| B. L. S. Code No. | Name | Index of sensitivity | B. L. S. Code No. | Name | Index of sensitivity |
| 144 | Cast iron pipe | 50.7 | 399 | Augers | 0 |
| 541 | Yellow pine lath | 52.8 | 474 | Nickel, cathode | 0 |
| 488 | Zinc, pig | 52.8 | 439 | Steel rails | 1 |
| 516 | Douglas fir, B | 53.1 | 581 | Stone, crushed | 3 |
| 487 | Copper wire | 53.5 | 418 | Files | 5 |
| 472 | Copper electrolytic | 55.6 | 402 | Bar iron, Pittsburgh | 6 |
| 515 | Douglas fir #1c | 55.8 | 398 | Angle bars | 1.4 |
| 483 | Solder | 56.2 | 409 | Boiler tubes | 1.4 |
| 522 | Yellow pine flooring | 58.6 | 417 | Chisels | 1.8 |
| 484 | Tin | 61.6 | 415 | Garbage cans | 2.0 |
| 415 | Steel scrap | 66.0 | 436 | Galvanized pipe | 2.0 |
| 762 | Plate glass mirror | 72.6 | 507 | Roofing tile | 2.4 |
| 470 | Antimony | 73.9 | 413 | Crossent saws | 3.0 |
| | | | 456 | Vises | 3.0 |
| | | | 425e | Mesabi ore | 3.5 |
| | | | 435 | Blacksteel pipe | 4.2 |
| | | | 710 | Vacuum cleaners | 4.4 |
| | | | 676 | Carvers | 4.7 |
| | | | 370 | Engine, 3-horsepower | 4.8 |
| | | | 497 | Concrete blocks | 5.0 |
| | | | 561 | Wallboard | 5.6 |
| | | | 380 | Corn planter | 6.0 |
| | | | 414 | Hand saws | 6.0 |
| | | | 687 | Electric ironers | 6.0 |
| | | | 494 | Sinks | 6.5 |
| | | | 393 | Grain thresher | 7.0 |
| | | | 570 | Quicklime | 7.8 |
| | | | 367 | Grain binder | 7.8 |
| | | | 391 | Spades | 8.0 |
| | | | 381 | Tractor plow | 8.4 |
| | | | 376 | Hoes | 8.6 |
| | | | 385 | Hand rake | 9.4 |
| | | | 421 | Corn knives | 9.4 |
| | | | 681 | Felt base, part carpet | 9.5 |
| | | | 698 | Electric range | 9.5 |
| | | | 388 | Cream separator | 9.7 |
| | | | 390 | Shovels | 9.7 |
| | | | 686 | Electric irons, plain | 9.8 |

NONDURABLE ITEMS

| | | | | | |
|---|---|---|---|---|---|
| 184 | Corn oil | 50.2 | 585 | Carbon dioxide liquid | 0 |
| 748 | Wood pulp, sulphate | 51.5 | 587 | Nitric acid | 0 |
| 4 | Oats, No. 2, white | 52.0 | 590 | Salicylic acid | 0 |
| 47 | Alfalfa seed | 52.2 | 607 | Calcium carbide | 0 |
| 349 | Beehive coke | 52.5 | 628 | Sodium silicate | 0 |
| 355 | Fuel oil, Oklahoma | 52.6 | 630 | Crude sulphur | 0 |
| 145 | Bacon | 53.1 | 746 | Wrapping paper | 0 |
| 737 | Cottonseed meal | 53.8 | 781 | Plug tobacco | 0 |
| 6c | Wheat | 54.1 | 136 | Canned peas | .1 |
| 19c | Sheep | 54.6 | 610 | Coal tar, brown | .4 |
| 173 | Oleo oil | 55.0 | 648 | Opium | .4 |
| 1 | Barley, malting | 55.2 | 586 | Muriatic acid | 1.2 |
| 188 | Soybean oil | 55.8 | 592 | Sulphuric acid | 1.2 |
| 645 | Glycerin, c. p | 56.0 | 660 | Manure salts, 20% | 1.5 |
| 52 | Beans, dried | 56.6 | 156 | Plain soda | 1.6 |
| 170 | Lard | 56.8 | 176 | Salt | 1.6 |
| 150 | Pork, fresh, compressed | 57.1 | 626 | Sodium bicarbonate | 1.6 |
| | | | 759 | Cigar boxes | 2.1 |
| 187 | Peanut oil | 57.8 | 622 | Sal soda | 2.2 |
| 185 | Cottonseed oil | 58.0 | 741 | Newsprint paper | 3.0 |
| 181 | Tallow (edible) | 58.8 | 654 | Strychnine | 3.2 |
| 116 | Corn meal, yellow | 59.0 | 53 | Onions | 3.4 |
| 5 | Rye, No. 2 | 59.8 | 627 | Caustic soda | 3.6 |
| 631 | Tallow, packers | 61.0 | 537 | Butyl acetate | 3.8 |
| 46 | Peanuts | 61.2 | 608 | Calcium chloride | 4.1 |
| 736 | Bran | 61.6 | 620 | Caustic potash | 4.5 |
| 551 | Chinawood oil | 61.8 | 655 | Zinc chloride | 4.8 |
| 554 | Rosin, grade B | 61.9 | 625 | Soda ash | 5.2 |
| 17c | Hogs | 63.0 | 101 | Crackers, sweet | 5.6 |
| 695 | Tankage | 63.8 | 128 | Dried currants | 5.6 |
| 739 | Middlings | 65.3 | 623 | Salt cake | 5.6 |
| 51 | Tobacco, leaf | 68.0 | 659 | Kainit, 20% | 5.6 |
| 146 | Cured pork belly | 69.8 | 649 | Hydrogen peroxide | 6.0 |
| 2c | Corn | 71.5 | 556 | Turpentine, south | 6.7 |
| 18 | Clover seed | 72.4 | 777 | Toilet soap | 7.3 |
| 147 | Cured pork belly rib | 74.1 | 177 | Canned soup (tomato) | 7.5 |
| 113 | Hominy grits | 77.6 | 593 | Denatured alcohol | 8.0 |
| 115 | Corn meal, white | 77.6 | 619 | Pine oil | 8.5 |
| | | | 137 | Canned spinach | 8.6 |
| | | | 613 | Copperas | 8.6 |
| | | | 545 | Ethyl acetate | 8.7 |
| | | | 171 | Molasses | 8.8 |
| | | | 595 | Aluminum sulphate | 8.9 |
| | | | 132 | Bananas | 9.0 |
| | | | 663 | Sodium nitrate | 9.2 |
| | | | 635 | Citric acid | 9.6 |
| | | | 638 | Caffeine | 9.8 |

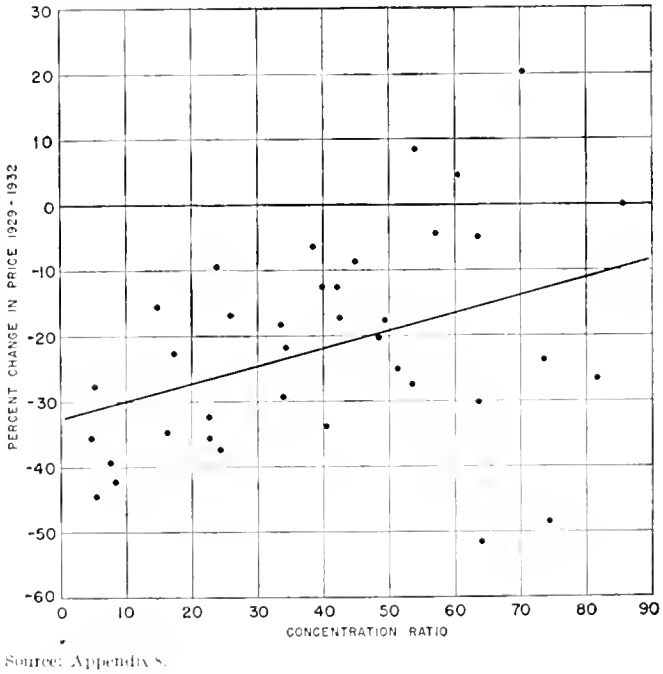
Source: Based on data given in table 1 of appendix 2.

sitivity, whereas the price of such items as iron ore, iron bars, steel rails, and nickel, whose production is known to be relatively concentrated are highly insensitive to depression forces. No highly fabricated durable goods in the list shows great sensitivity, but the insensitive durable items such as agricultural implements and tools of various sorts are produced in industries known to be relatively concentrated. Among the nondurable goods the sensitive items are, almost without exception, farm or forest products or petroleum and its derivatives, goods in the production of which there is little concentration. On the other hand the production of the nondurable items whose prices are insensitive to depression are on the whole dominated by a relatively few enterprises. An examination of these data can leave little doubt that it is not durability as such that makes for depression insensitivity of price but rather that on the whole the production of durable goods is more concentrated than is that of nondurable goods and that the insensitivity of prices is primarily related to this concentration.

*Primarily a function of administrative controls.*—The main conclusion to be reached from this analysis is that, while many factors influence price insensitivity, the dominant factor in making for depression insensitivity of prices is the administrative control over prices which results from the relatively small number of concerns dominating particular markets. Though depression insensitivity of prices occurs more often in

CHART XXII

RELATION BETWEEN CONCENTRATION AND DEPRESSION DROP IN PRICES IN 37 MANUFACTURING INDUSTRIES




Source: Appendix S.

the case of durable goods and fabricated products than in the case of nondurable goods and raw materials, it is just these fields in which production is most concentrated in relation to the available market and prices are most extensively dominated by administrative controls. Where durable goods and fabricated products are supplied by a large number of producers for a single market, their prices tend to be relatively sensitive to depression influences and where the production of nondurable goods and raw materials is concentrated into the hands of a relatively small number of producers, their prices appear to be on the whole relatively insensitive to depression influences.

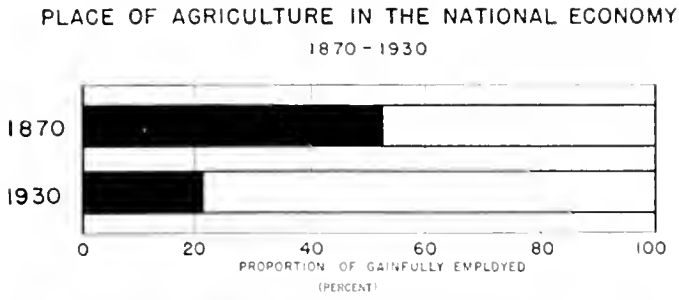
*Factors underlying administrative controls.*—As a result of the foregoing analysis, it is possible to construct a fairly clear picture of the varying degrees of the depression sensitivity of prices and the factors lying back of this insensitivity. In chapter IV on the geographical structure of production, the flow of goods was described showing raw materials moving through successive stages of fabrication and distribution to the consumer. At each stage the potential market for the particular product tends to narrow down. Wheat can be produced for a world market but fresh bread baked in one place cannot be economically supplied to another place only a few hundred miles away. Thus as goods move from raw materials to finished products the geographical market on the whole tends to narrow down. In a similar fashion the market for a particular raw material narrows down as it becomes more and more fabricated because of the narrowing of alternative functions for which it can be used. Wheat can be used for seed, be fed to chickens or be made into flour, serving any one of the functions implicit in these alternative uses. But once it is made into flour it cannot be used as seed and once the flour has been made into bread it cannot alternatively be used to make crackers or macaroni. Thus there is a tendency for the market for the particular bushel of wheat or bag of flour to narrow down in the successive stages of fabrication.

Because of this narrowing down of the market at successive stages both geographically and functionally, it is usually possible for fewer and fewer producers to supply any particular market. It takes a million wheat farmers to supply the wheat market, a few thousand flour mills to supply the flour market and only a handful of bakers to supply some rural town or small city with bread. This same tendency appears in industry after industry: as cotton moves into yarn, into cloth, into clothing, and onto the shelves or racks of the local store; as iron ore moves into pig iron, into steel, into particular standard shapes, and finally into a place in a particular building; and as timber moves into wood pulp, into paper, into a printed book and onto the counter of a local drug store. Sometimes there is a return flow as the worn-out auto reappears as scrap iron or as the book is collected as waste paper, but on the whole the market for goods at each successive stage tends to be narrower, sometimes geographically, sometimes functionally, and sometimes both.

With this narrowing there is almost necessarily a tendency for the required number of separate producers to be less. While millions of farmers are required to supply the market for food, there may be less than a half dozen grocery stores which are within the economical range of the particular housewife. And as the number of separate enterprises supplying a particular market is smaller the administrative control over prices which can be exercised by each producer tends to increase. The wheat farmer has to take the market price for his grain; the local baker can set his own price and as long as it is not too far out of line with the price set by the grocery store down the street he can usually persuade some customers that his bread is worth the difference, especially if his advertising expenditure is adequate. This narrowing of the market with successive stages of fabrication appears to be a factor in making for administrative control over price and insensitivity of prices to depression.

A second factor making for administrative control and price insensitivity is the large size of the efficient enterprise in many lines of activity. No one has yet shown how corn can be produced and marketed efficiently by an enterprise employing several thousand persons. The efficient farm unit—even a large wheat farm or cotton plantation—is relatively small. On the other hand, no one has shown how a steel mill or an aluminum plant can be operated efficiently by a handful of workers. The efficient steel mill calls for hundreds of workers, and the production of steel through its various processes may involve enterprises employing thousands of workers. All the new pig aluminum produced in the country is produced by only four plants. Thus, administrative control over price not only arises and increases as the market narrows down but it tends to increase wherever efficiency in production requires large enterprises which reduce the number of independent producers required to supply the particular market. On the whole, this reduction in the number of separate producers appears to be a dominant factor in railroading and communication, highly significant in manufacturing, of minor significance in agriculture, and of varying significance in forestry and mining. In the manufacturing industries it appears particularly

CHART XXIII




Source: United States Department of Commerce, *Unpublished Report on Census Data*, and the *Census of Population, Occupations*, vol. IV, 1930.

important in the durable goods industries, but other factors may account for the concentration in many durable goods industries.

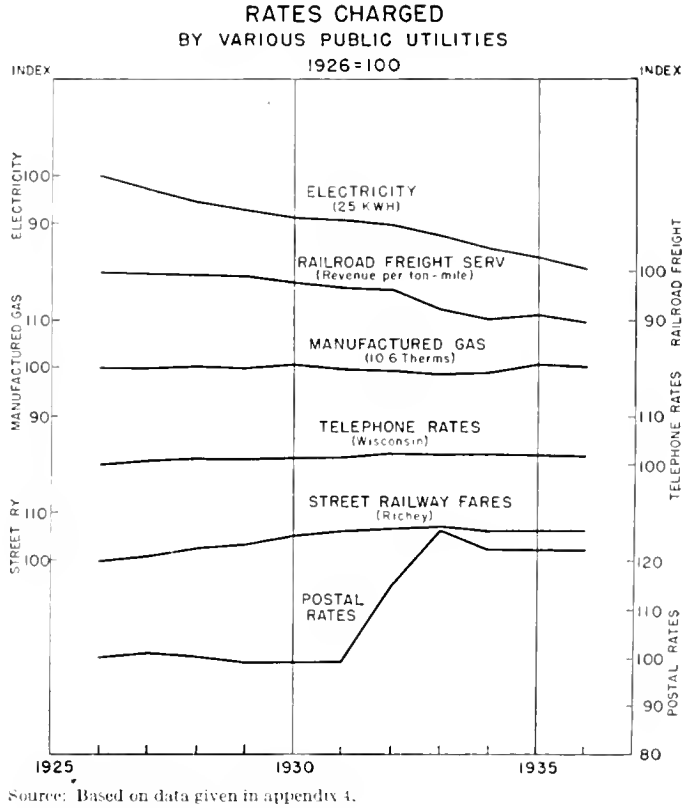
A third major factor contributing to administrative control over price and price insensitivity is collusion between separate enterprises or the bringing of whole industries under the dominant control of a single individual or group for the very purpose of exercising control over price. This control may be very loose and informal or may involve the concentration of production into a single enterprise as in the case of nickel and virgin aluminum. It may be reinforced through patents, through control of natural resources, or through strategic location. But however maintained, it adds to the inflexibility inherent in the narrowing of markets and the size requirements of modern industry.

Just how far each of these factors contributes to the presence of administrative control over prices cannot be determined without a careful study, industry by industry, of those industries showing a significant degree of administrative control. It is, however, abundantly clear that a considerable degree of administrative control is inherent in the narrowing of markets and the willingness of buyers to accept the one-price system of American merchandizing. Further administrative control is implicit if the efficiencies of modern technology are to be realized. Only to the extent that administrative controls arise from collusion between enterprises or through the bringing of production under common control beyond the extent necessary for efficient operation is there an opportunity to reduce the existing degree of administrative control without incurring a cost of decreased efficiency in the use of resources. Thus a considerable degree of administrative control over prices appears to be inherent in the modern economy. Administered prices and their depression insensitivity seem to be an integral part of the structure of economic activity. With the century-long transition of this country from a predominantly agricultural to a predominantly industrial country, the administration-dominated prices of industry have gradually displaced the market-dominated prices of agriculture as the more characteristic form of price. As recently as 1870, over half of the gainfully employed workers in the United States were engaged in agriculture, whereas in 1930 little over a fifth were so engaged. This transition is shown in chart XXIII. However much of a role price administration may have played in the earlier years of this century, there can be little question that it plays a dominant role today.

### Significance of Administrative Control over Prices

The great importance of administrative control over prices is not primarily its effect upon the gradual adjustment of prices necessary to insure a reasonable balance in the use of resources but the disorganizing results which arise from the resulting depression insensitivity of prices. It has already been shown that in the bulk of unregulated industries there is sufficient competition to keep monopoly profits to a minimum and insure at least a gradual readjustment of prices. In certain industries in which the power to administer prices is inherently so great that it makes possible significant monopoly profits, government can intervene to minimize or eliminate such profits either by sharing in the process of price administration, as in the case of railroad and utility regulation or by taking over the administering

CHART XXIV




Source: Based on data given in appendix 4.

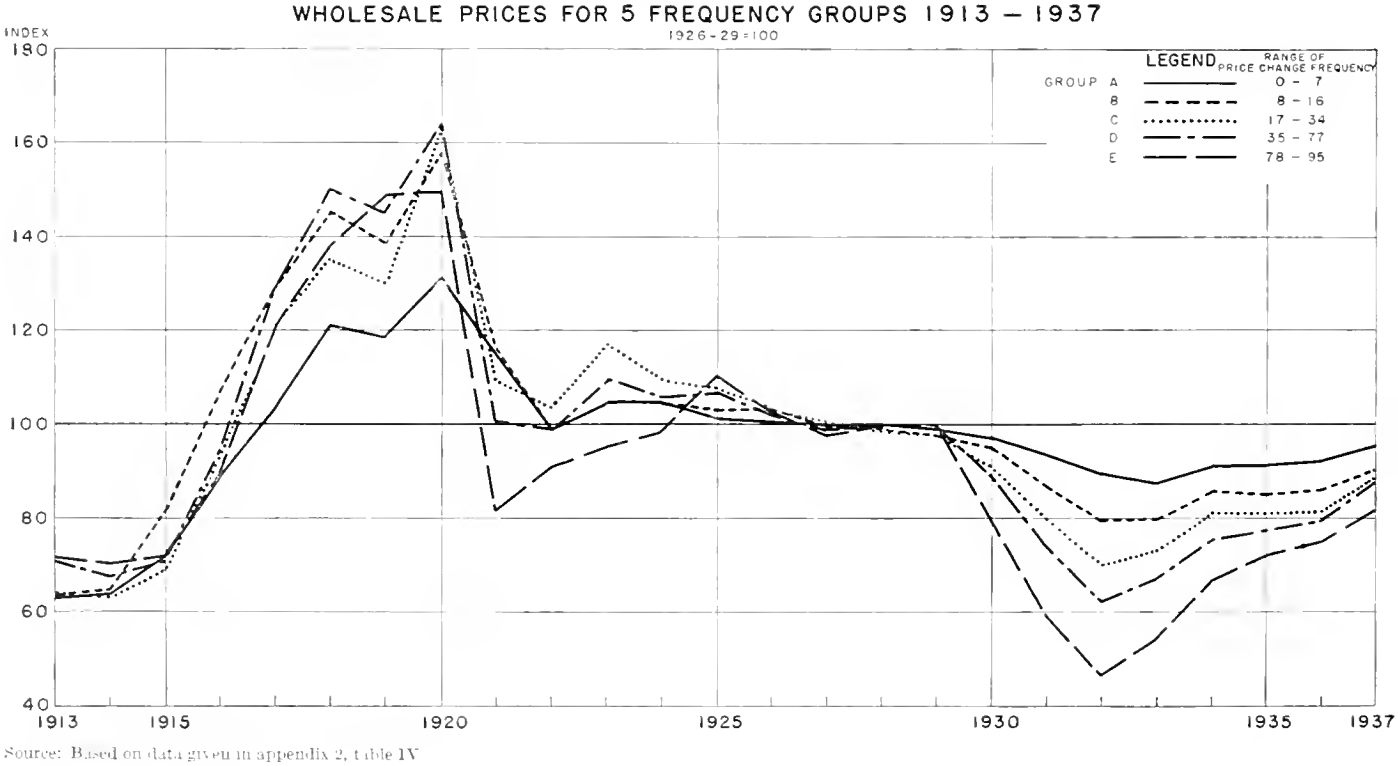
of prices through government ownership. For the national economy as a whole the combination of competition in the bulk of industries and government regulation or ownership in others appears to be capable of insuring the adjustments in price necessary to a balanced use of resources if it were not for the disorganizing effect of prices which are insensitive to depression influences. It is in the latter insensitivity that administrative control of prices has its major significance. Government intervention does not appear to reduce the disorganizing effects of insensitivity. However, successful governmental regulation or operation may be, in minimizing monopoly profits, it appears to increase rather than to decrease the insensitivity of prices to depression influences. This is brought out in chart XXIV which gives indexes of rates charged by the post office and by various regulated utilities before and during the depression. There is almost no downward reaction to the depression and in some cases an actual depression rise, most conspicuous in the case of the post office whose rates are administered by the Congress. Thus, while government may intervene to minimize monopoly profits in particular industries, this type of intervention does not operate in such a way as to bring the sort of depression adjustments in price which are likely to arise where prices are dominated by the market.

The insensitivity of administered prices to depression influences is important because it means that general shifts in the price level do not take place in response to deficiencies of purchasing power. Instead, when pressure for general revision of prices arises as a result of depression influences, the market-dominated prices drop while the administration-dominated prices show varying degrees of resistance to readjustment. This can be clearly seen in chart XXV, which gives five indexes of the behavior of prices when items are grouped according to their frequency of price change, infrequency of price change being a rough guide to the degree of administrative control over price. Index E reflects the behavior of the 123 items from among the 617 wholesale price items which changed in price practically every month from 1926 to 1932. Index A represents 136 items which showed less than 8 changes between successive monthly quotations in the same 8-year period, or an average of less than one change a year. The other three indexes represent items intermediate in the frequency of price change.[25] All the indexes are based on the average of 1926 to 1929 as 100, thus being arbitrarily made to fit together during that period.

An examination of the chart shows the progressively greater sensitivity of prices to depression as the prices show less administrative control. It is notable that the

[25] The grouping of items by frequency of price change is made, not because of any significance of frequency of price change in itself but because it is at least a rough index of the degree of administrative control and is largely independent of the actual behavior of prices between 1929 and 1932 and between 1932 and 1937. Essentially, the same classification would have resulted if items had been grouped by the frequency of price changes from 1926 to 1929.

CHART XXV




Source: Based on data given in appendix 2, table IV

indexes spread out between 1929 and 1932 and come more or less together between 1932 and 1937. It is also significant that, in spite of the dislocations of the World War and its immediate aftermath, the five indexes when carried back to 1913 come fairly close together.[26] During the war years the price rise appears to have been of a more general character, the whole body of prices rising, though the infrequently changing prices as a group rose least. However, in the precipitate depression drop of prices from 1920 to 1921 when the index of wholesale prices dropped 37 percent, the five groups of prices showed the same tendency for the market-dominated prices to drop most, and the administration-dominated prices to drop least. In the recovery period from 1921 to 1923, the three groups showing the more frequent price changes rose, the most frequently changing rising the most as in the period from 1932 to 1937. On the other hand the two least frequently changing groups were lower in 1923 than in 1921. These changes are indicated in table V.

[26] If 1913 had been used as a base instead of 1926 to 1929, the five indexes would have shown the same splaying out in the depression and coming together in the recovery, though they would not have started as close together or returned as nearly together.

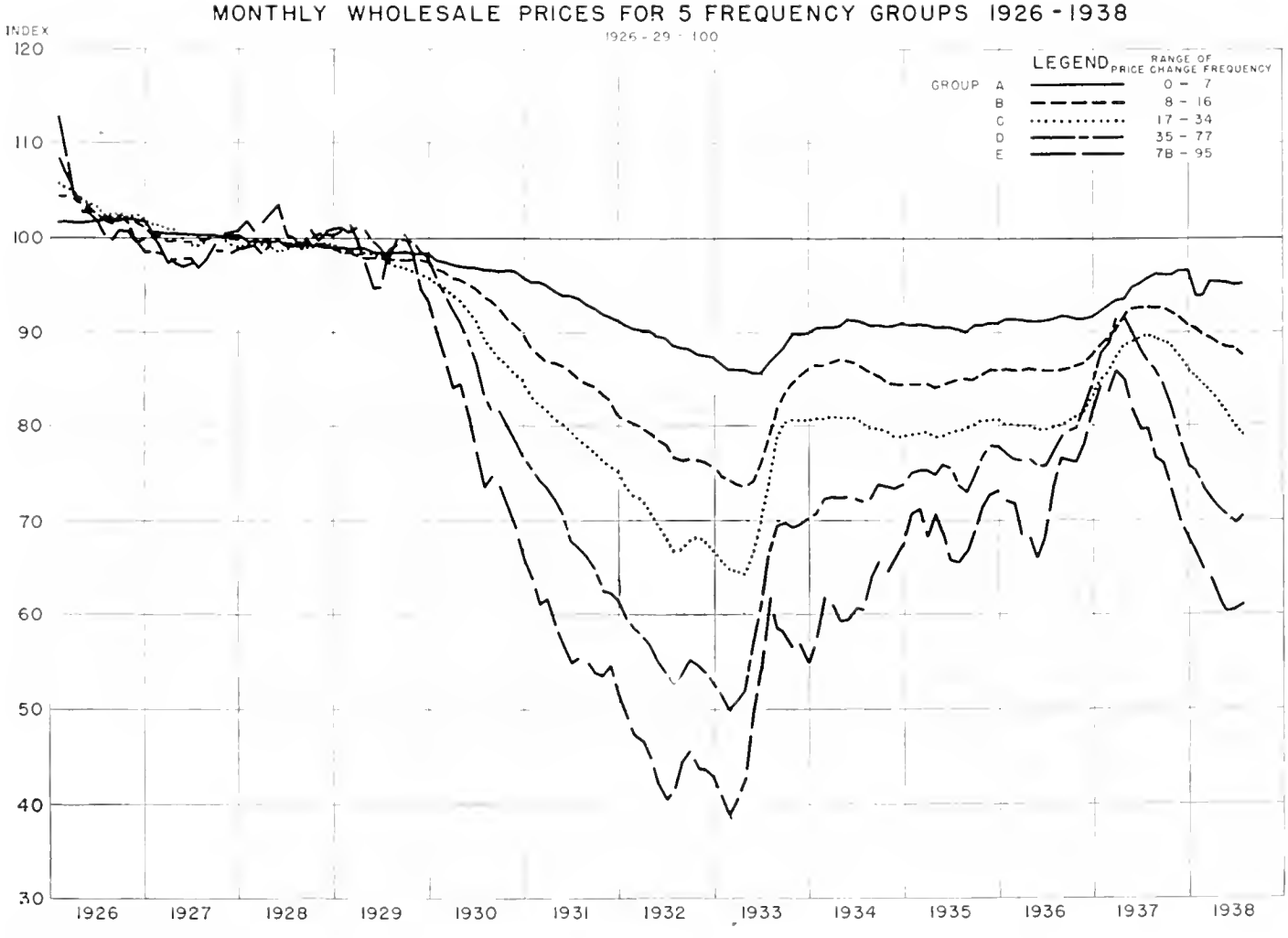
TABLE V *Decline and recovery of 5 price indexes, 1920–23, 1929–37*

| | Drop in prices 1920 to 1921 as a percent of 1920 prices | Rise in prices 1921 to 1923 as a percent of 1923 prices | Drop in prices 1929 to 1932 as a percent of 1929 prices | Rise in prices 1932 to 1937 as a percent of 1937 prices |
|---|---|---|---|---|
| Group A | 12.3 | −10.2 | 9.1 | 6.3 |
| Group B | 26.6 | −11.1 | 18.7 | 13.0 |
| Group C | 33.3 | 6.7 | 28.2 | 20.8 |
| Group D | 38.8 | 8.6 | 37.9 | 29.5 |
| Group E | 45.4 | 14.5 | 53.1 | 41.4 |
| Wholesale price index | 36.8 | 2.7 | 32.0 | 24.9 |

Source: Based on data in appendix 2, table IV.

The uniform character of the difference in the behavior of the five groups is brought out more clearly when the monthly data are plotted as in chart XXVI. This chart also brings out the sharp downward swing of

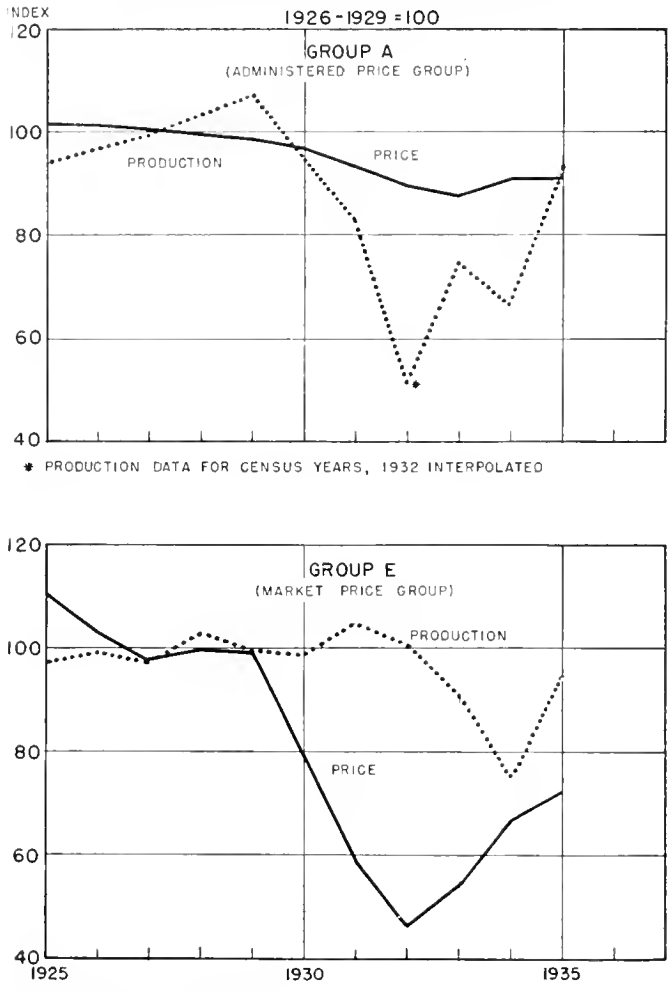
CHART XXVI




Source: See appendix 18, section 23.

CHART XXVII

PRODUCTION AND PRICES OF ADMINISTERED AND MARKET PRICE COMMODITIES




Source: See appendix 18, section 24.

prices after the early months of 1937 and indicates again a repetition of the behavior pattern already noted.

The monthly data also bring out the lag in the initial reaction to depression on the part of prices more subject to administration. The most sensitive index, E, turns down first, followed a month later by D and two months later by C and B. The least sensitive index, A, lagged by eight months. In terms of the period of the depression, these are relatively minor lags. The fact that they are present and are minor lends support to the idea that the relative insensitivity of the administered price does not reflect primarily a delay in reacting to a reduced level of purchasing power but is a differential reaction which could not be expected to disappear if conditions were stabilized at the lower level of purchasing power.[27]

[27] This idea is given further support by the fact that except for the slight lag already noted the insensitive prices began to rise in the recovery period about as soon as the sensitive prices even though there was still a very wide gap between their relative positions.

As has already been indicated, there is a marked tendency for some industries to react to the depression and recovery primarily through a decline and recovery in prices, whereas others react primarily through a decline and recovery in production. This same general tendency is reflected when production indexes are developed to correspond to the five price indexes just given. The production indexes actually developed are very preliminary in character and the coverage is far from complete, varying from approximately 50 percent of the total value of the commodities whose prices are represented by the items in group A, to 80 percent in group E. The production indexes for groups A and E are given in chart XXVII [28] along with the corresponding price indexes. This chart indicates clearly the decline and recovery in price of the group of items dominated by the market and the decline and recovery in production for the most administration-dominated group of items. The behavior of all five groups in depression and recovery is given in table VI. The prices and production ratios given in the table are averages for each group and as such allow the special factors which effect the price and production relationships of particular commodities to offset each other to a considerable extent so that the rough general relationship underlying this diversity of behavior is apparent. Even with this offsetting of special factors, the three middle groups do not show a smooth progression but reflect other factors influencing price behavior. Yet they fall intermediately between the two extreme groups and support the rough association between a large depression drop in production and a small drop in price on the one hand, and a large drop in price and maintained production on the other, with intermediate results between.

TABLE VI.—*Percentage changes in production and prices for five frequency groups*

| Group | Percent drop, 1929–32 | | Percent increase, 1929–35 | |
|---|---|---|---|---|
| | Price | Production | Price | Production |
| A | 9.4 | 52.6 | 2.0 | 81.0 |
| B | 18.7 | 32.8 | 6.9 | 26.5 |
| C | 28.2 | 45.7 | 15.5 | 46.8 |
| D | 37.9 | 38.7 | 25.0 | 32.2 |
| E | 53.4 | −0.4 | 55.7 | −5.9 |

Source: Based on data in appendix 18, section 24.

**New Terms Necessary for the Analysis of Price Behavior**

The foregoing analysis points to characteristics in the price structure which require new terms for their discussion. It is not sufficient to talk of a change in the level of prices such as might be reflected by a change in the index of wholesale prices. If the insensitive

[28] The data for the other groups were completed after the chart was made and time did not permit their inclusion.

prices remained constant while the sensitive prices went down 20 percent, the net effect might be to lower the index of wholesale prices by 10 percent. The same change in the index could be brought about by a decline in all prices of 10 percent. Yet the two ways by which the drop in the wholesale price index was brought about would have quite different implications. The general drop in prices would leave price relationships unaltered. If, before such a drop, wheat was a dollar a bushel and a threshing machine cost $2,000, the latter could be obtained for 2,000 bushels of wheat. If both wheat and threshers dropped 10 percent in price the threshers could still be obtained for 2,000 bushels of wheat.

On the other hand, the differential type of changes tends to distort price relationships. If, in the light of existing resources, wants, and techniques, the prices of wheat and threshers were approximately in balance at $1 and $2,000 respectively and wheat dropped to 80 cents because of a decline in general purchasing power, while the price of threshers remained constant, the two prices would be out of balance so far as the basic relation between wants, techniques, and resources is concerned.[9]

General price changes of the first type have been extensively discussed in economic literature, but the second type has received little attention. Yet the general price changes between 1929 and 1938 were almost entirely of the second type. It has already been indicated that between 1929 and 1932 there was a considerable drop in the wholesale price index, but that this drop was made up of a violent drop in the prices of market-dominated commodities, and there was only a very small drop or no drop at all for the bulk of the prices which are subject to extensive administrative control. As a result, price relationships were seriously distorted. In the recovery period from 1932 to 1937, much of this distortion was eliminated by the large increases in the market-dominated prices and the relatively small increase in the bulk of the administration-dominated prices.

This differential behavior of prices points to a characteristic of the price structure of great importance and one calling for intensive study. General changes in the level of prices are often looked upon as an essential part of the process by which the market mechanism operates more or less automatically to maintain full and effective use of resources. Yet the evidence above suggests that, at least under some conditions, the forces making for a general change in the price level actually work themselves out through a violent distortion of price relationships rather than through a general price readjustment.

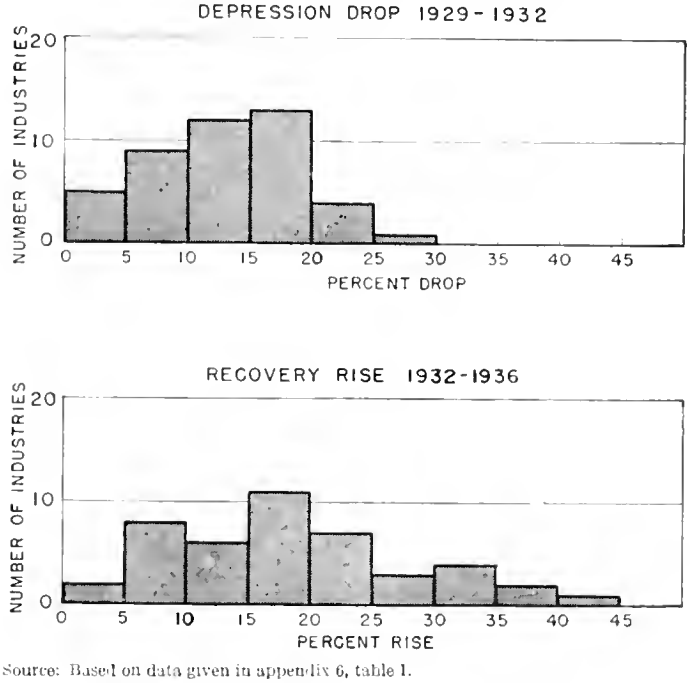
[9] Among technicians the two different types of price change might respectively be referred to as a change in the "slope" of the price structure or a "rotation" of prices when there is a change in the relation between indexes made up respectively of market- and administration-dominated prices, and as a change in the "level of the price structure" or a "translation" of prices when such indexes change upward or downward together. Changes in prices might be of either type or a compound of both types of change, though the general price changes during the current depression were for the most part changes in "slope."

### Labor Rates

The structure of labor rates cannot be studied in as great detail as that of goods prices because of the absence of adequate data. Prior to 1929 the hourly wage data are too inadequate to provide a basis for any general analysis. The consideration of labor rates is, therefore, limited to the years from 1929 to 1936. For this period the behavior of wages will be examined in 44 manufacturing industries representing approximately 60 percent of the workers employed in manufacturing in 1935. For each industry the figures used in the analysis are not indexes of actual hourly wage rates but of average wage rates derived by dividing total weekly pay rolls by total hours worked for a group of firms in each industry which report such data to the Bureau of Labor Statistics. The resulting figures represent a rough index of hourly wage rates in each industry, but have the weakness that if the proportion of skilled and unskilled workers shifts markedly the figures as calculated will, to that extent, give a distorted representation of hourly wage

CHART XXVIII

**DISTRIBUTION OF HOURLY WAGE RATES IN 44 INDUSTRIES BY DEPRESSION DROP AND RECOVERY RISE**




Source: Based on data given in appendix 6, table 1.

rates. Until correction can be made for this factor, the figures will have to serve.

An examination of the wage data shows very much greater similarity of behavior in wage rates than in goods prices, and a much smaller sensitivity to depression. This is brought out in chart XXVIII, which shows the 44 industries distributed according to the drop in wage rates between 1929 and 1932, and the rise from 1932 to 1936. In half the industries, the hourly wage rate dropped less than 15 percent while the all commodity wholesale price index dropped 32 percent and the retail prices dropped 20 percent. Only four industries in the sample show a cut in wage rates of more than 20 percent. Since in most cases the hourly wage rate dropped less than retail prices, these figures suggest that workers who continued to be fully employed experienced, on the whole, a gain in real buying power, and that the real burden of the depression took the form of unemployment or partial employment and the lack of stability which goes with such conditions. In the recovery period the differences in behavior were greater, presumably in part due to the increased strength of labor organizations which were able to lift wage rates in particular industries appreciably above their 1929 level.

The extent of the depression drop in wage rates does not appear to be closely associated with the durability of goods produced or with the depression drop in employment. In 20 of the 21 durable goods industries included in the sample, employment dropped over 50 percent while it dropped less than 50 percent in all but three of the semi- or non-durable industries covered. Yet indexes of the hourly wage rates in the two groups behave almost alike. This is shown in chart XXIX which indicates not only the behavior of wage rates in the durable and nondurable groups of industries but also the difference in the volume of man-hours worked. The same lack of any clear connection between the decline in the manpower required by an industry and the decline in wage rates is apparent when the individual industries are compared with each other. The 44 industries are listed in table VII in order of the percentage decline in hours worked and the percent decline in wage rates.

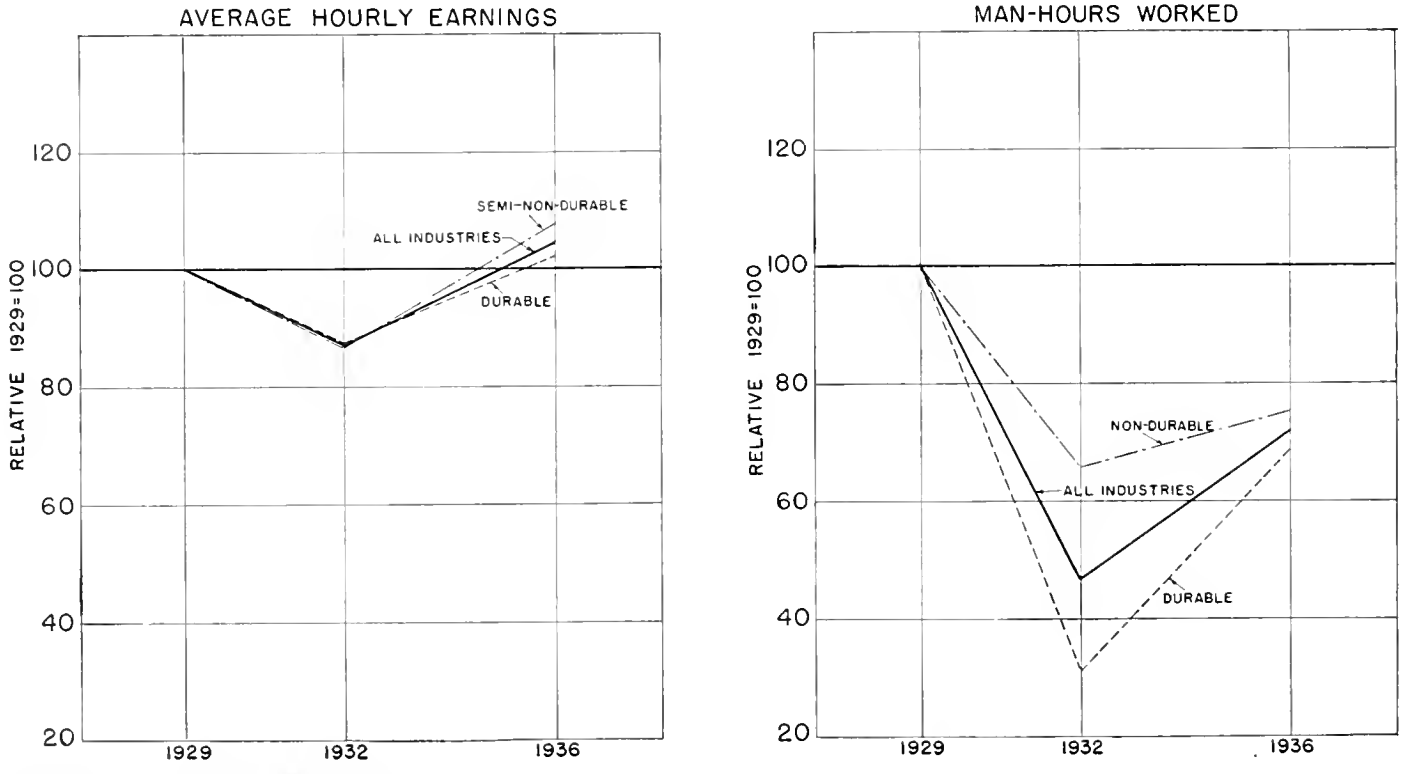
In the recovery period, the semi- and nondurable industries showed greater increases in wage rates than did the durable goods but the difference is not very significant.

Examination of table VII suggests that, on the whole, the wage rates in the concentrated industries like auto-

CHART XXIX

EARNINGS AND EMPLOYMENT IN RELATION TO DURABILITY

1929, 1932 & 1936




Source: Based on data given in appendix 6, table II A.

TABLE VII.—*Percentage decline of man-hours and wage rates in 44 industries, 1929–32*

| Industry | Percentage decline in man-hours 1929–32 | Percentage decline in hourly wage rates 1929–32 |
|---|---|---|
| Machine tools | 84.8 | 7.8 |
| Agricultural implements | 84.2 | 18.2 |
| Brick, tile, and terra cotta | 77.7 | 21.3 |
| Lumber: Sawmills | 74.8 | 16.9 |
| Structural and ornamental work | 71.8 | 8.3 |
| Foundry and machine shop products | 71.7 | 13.2 |
| Radios and phonographs | 70.4 | 2.9 |
| Blast furnaces, steel works, and rolling mills | 70.2 | 19.5 |
| Lumber: Millwork | 70.0 | 16.6 |
| Electrical machinery, apparatus, and supplies | 69.2 | 6.9 |
| Brass, bronze, and copper products | 66.6 | 10.9 |
| Steam and hot water heating apparatus | 65.9 | 13.5 |
| Automobiles | 63.5 | 9.1 |
| Hardware | 62.9 | 4.3 |
| Cement | 62.4 | 18.6 |
| Cast-iron pipe | 60.3 | 18.1 |
| Stoves | 59.8 | 10.8 |
| Silver and plated ware | 55.0 | 16.9 |
| Glass | 52.3 | 11.3 |
| Ship building | 51.3 | 3.7 |
| Stamped and enameled ware | 48.6 | 13.5 |
| Carpets and rugs | 63.7 | 14.0 |
| Fertilizers | 60.4 | 14.4 |
| Rubber tires | 60.3 | 7.1 |
| Silk and rayon goods | 43.8 | 20.4 |
| Chemicals | 42.8 | 2 |
| Cotton goods | 39.2 | 21.9 |
| Woolen and worsted goods | 38.9 | 19.0 |
| Cigars and cigarettes | 37.0 | 11.0 |
| Confectionery | 37.0 | 8.8 |
| Leather | 36.3 | 16.2 |
| Paper boxes | 36.1 | 6.1 |
| Ice cream | 35.8 | 11.6 |
| Paper and pulp | 35.0 | 19.4 |
| Petroleum refining | 31.8 | 2.3 |
| Dyeing and finishing, textiles | 28.5 | 20.0 |
| Knit goods | 27.9 | 15.9 |
| Men's clothing | 26.8 | 29.3 |
| Newspaper printing and publishing | 24.9 | 8.4 |
| Boots and shoes | 24.6 | 10.8 |
| Flour | 23.6 | 14.2 |
| Rayon and allied products | 22.5 | 5.5 |
| Slaughtering and meat packing | 21.0 | 13.1 |
| Chewing and smoking tobacco and snuff | 8.4 | 18.7 |

Source: Based on data given in appendix 6, table I.

mobiles, rayon, and rubber tires, declined less than wage rates in the unconcentrated industries like cotton textiles and men's clothing. To bring out this difference in behavior, both the durable goods industries and the semi- and non-durable goods industries have been divided into concentrated and nonconcentrated industries on the basis of the proportion of the workers in the industry employed by the four largest companies. Industries in which four companies hired more than 30 percent of the workers are arbitrarily classed as concentrated industries. When the wage rates for the separate groups are plotted, as in chart XXX, the greater sensitivity of the nonconcentrated industries is apparent. In the case of both durable and nondurable goods, wage rates in the concentrated industries as a group fell less than rates in the nonconcentrated industries and rose more in the period of recovery.

Apart from the difference in behavior shown in the charts mentioned above, reflecting the durability of goods and degrees of industrial concentration, the analysis of the wage data for the 44 industries has not disclosed any characteristics of wage behavior which appear significant for the structure of prices.[30] A larger sample, covering a longer period and subjected to more intensive analysis, would undoubtedly disclose important elements in wage behavior. How are wages actually affected by labor organization, by regional difference, and by other factors? As it is, one can point to the greater homogeneity in the behavior of wage rates than in the behavior of goods prices and a very much greater stability than is shown by wholesale prices. At the same time a degree of flexibility is shown which suggests a process of constant gradual readjustment to altered conditions.

[30] Analysis of the sample of 44 industries disclosed no significant association between the level of wage rates in 1929 and the depression drop, or between price changes and changes in wage rates.

## Security Prices

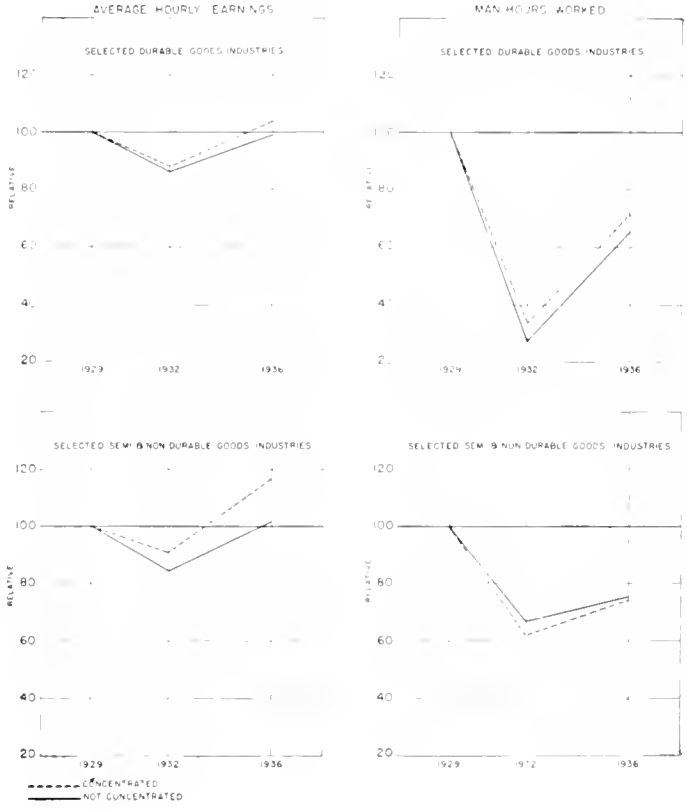
The third main element in the price structure consists of security prices and the associated interest and dividend rates. They are just as much a part of the price structure as are goods prices and labor rates. But research using modern methods of investigation has not yet been carried to the point where characteristics significant to the structure of the whole economy have been disclosed. Only the general independence and fluidity of security prices referred to in the first section of this chapter are evident.

The fact that security prices act more or less independently of goods prices and labor rates can undoubt-

CHART XXX

EARNINGS AND EMPLOYMENT IN RELATION TO DURABILITY AND CONCENTRATION

1929, 1932 & 1936




Source: Based on data given in appendix 6, table II A.

edly be explained in part by the small volume of new securities issued each year in relation to the total issues outstanding. The average annual issue of new securities between 1926 and 1929 as reported by the *Financial and Industrial Chronicle* was only 8 billion dollars, compared with a total of corporate and governmental securities outstanding of over 185 billion dollars in 1929. The market is, therefore, to a large extent dominated by the outstanding securities and only to a secondary extent influenced by new issues. It is a little as though 200 to 250 million bales of cotton were constantly kept on hand. In such a case a difference between a 15 million bale crop and a 10 million bale crop in any one year would be likely to be of secondary significance compared to variations in the desire to store cotton. Because of the large volume of outstanding securities in relation to the annual increment, security prices can move in ways which are not directly related to productive activity. Just how these movements actually contribute to or impede effective use of resources needs to be made the subject of more intensive study along with the study of the interrelation of particular groups of security prices and of interest and dividends rates and their differential behavior.

**Conclusion**

This summary analysis of the behavior of prices brings out two characteristics of the price structure which throw important light on the organizing influence of prices and the market mechanism. The preceding chapter has indicated that the market can act as an organizing influence partly through the characteristics of money transactions and partly through gradual or rapid changes in price relationships. The analysis of actual price behavior in this chapter has suggested that, for the bulk of goods prices and, so far as the very summary analyses can indicate, for the bulk of labor rates and the bulk of security prices, there is a degree of price flexibility which appears sufficient to allow the gradual readjustment of price relationships to reflect the gradual changes in wants, in resources, and in techniques of production, if the level of economic activity were reasonably well maintained. On the other hand, the analysis has made it abundantly clear that large groups of prices, and to some extent labor rates, do not have a quick sensitivity to the decline in buying power which accompanied the recent depression, while other goods do have such a quick sensitivity. On the whole, it is the administration-dominated prices which show relatively little price readjustment with depression, while the market-dominated prices have tended to be sensitive not only to the more slowly working influence of changes in wants, resources and techniques, but also to the more rapid changes in mass buying power. This differential sensitivity of prices to depression influences tends to introduce serious distortions in the price structure and appears to reflect a disorganizing rather than an organizing role that the market can play. It is a characteristic of the price structure of the greatest importance.

# CHAPTER IX.—THE STRUCTURE OF CONTROLS

Chapter VII has discussed the main influences which make for economic organization—the market, administration, canalizing rules, and accepted goals. Chapter VIII has examined the structure of prices through which the market operates to influence economic activity. In this chapter an attempt will be made to examine the nonmarket controls through which economic activity is influenced and to show how the innumerable threads of control build up into a structure of controls which is quite as important as the structure of prices in determining the use which is made of national resources.

The major elements of control which are significant for the structure of the American economy are to be found in the great operating corporations, in the big financial institutions, in the trade and businesss associations, in the labor unions, in the farm organizations, in consumer organizations, and finally in the State and Federal Governments. If the economic controls associated with these organizations could be clearly delineated, the results would yield the main essentials in the structure of controls.

In practice, the task of outlining the structure of controls is more difficult than that of giving the essentails of the price structure. This difficulty arises in part from the greater difficulty of observing and measuring controls, and partly from lack of a background in economic literature for the conception of such a structure. Prices can fairly readily be measured, but the threads of control which constitute the control structures are often hidden, ill defined, and difficult to determine. Economic literature is full of discussions of price relationships and the conception of a system of interrelated prices. Against this background it is possible to set actual prices and bring out both their interrelated character and their behavior as they condition the use of resources. But economic literature has been little concerned with building up the conception of a system of more or less interrelated controls which might equally condition the use of resources. Since, in fact, economic activity in this country is quite as much organized through systems of administrative or canalizing controls as it is by the market, it is impossible to outline the structure of the American economy without covering the structure of such controls. The absence of any well articulated conception of such a system of controls makes this task more difficult and is likely to make the results less satisfactory.

## The Concept "Controls"

Because the term "controls" involves a relatively new economic concept, it is important to give it the greatest possible clarity.[1] It is used here to refer to the ability of one individual or group to influence the policies in respect to the use of resources which are adopted by another individual or group. Thus, if a person can influence the production policy of a particular farmer by offering to buy his product at a price, by threatening to foreclose his mortgage, or by some other means so that the farmer raises one crop rather than another, to that extent the person is in a position to exercise some measure of control over the farmer's activity. Likewise, a factory superintendent is usually in a position to exercise a considerable measure of control over the activities of the workers in the factory during working hours. The management of a corporation similarly exercises a measure of control over the activities of subordinates, while the directors and the security-holders may, in turn, exercise varying degrees of control over the policies adopted by the management. Other groups, such as important buyers of a company's products, suppliers of raw material, financing agencies, labor unions, and government agencies, may exercise a considerable influence over the policies of an enterprise and to that extent share in its control. In each case, policies are developed with respect to the use of the resources available to the individual, or enterprise, or agency, and each of the persons or groups who influenced these policies may be said to have exercised some measure of control over them.

It is possible to conceive of a highly complex pattern of threads of control running between all the individuals and groups in a society much as the physicist conceives of lines of attraction connecting all the stars and

[1] To some extent this chapter is concerned with subject matter which is covered by the political scientists under the heading of "power." The term "controls" is used rather than the term "power" for two reasons. First, the political writers in discussing "power" have traditionally limited the discussion to the field of government and have centered their attention, not on how power operates to make for more or less effective use of resources, but on how power is acquired, maintained, or displaced. Therefore, in attempting to integrate market, administrative and canalizing factors as they affect the organization of resources it has seemed advisable to use a term not likely to be given the traditional connotations usually attached to the term "power."

A second and more significant reason for using the term "controls" rather than the term "power" is the dynamic implications of the former. "Power" is solely a term of position whereas "control" is a term of both position and action. A person can have powers, i. e., be in a position of power. Likewise, a person can have controls, i. e., be in a position of control. But only in the case of control is it possible to say that a person controls, referring thereby to the dynamic process of influencing the policies adopted by others. The verb "to control" thus corresponds to the phrase "to exercise power." A third advantage of the term "controls" is that it is likely to result in greater concreteness. The statement that A has control will usually evoke the questions "control over what or whom?" Power is more likely to be treated as an abstract quality so that the statement that A has power is more likely to be accepted as requiring no further definition.

The term "controls" is used throughout this report in the plural or in the form "threads of control" to suggest the very partial character of the controls exercised by anyone over others in any concrete situation. Like the term "power" when applied to the problems of political science, the term "controls" applied to economic problems in this report is limited in its scope to cover only social relationships and does not refer to an individual's control over physical matter.



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planets in the universe. In outlining the structure of controls, however, only certain major controls need to be considered.

### Market Controls

Many of the threads of control exercised by individuals or groups are summarized in market phenomena. The influence which millions of bread consumers exercise over wheat farmers operates almost entirely through the influence of their demand on price and is thus summarized in the price of wheat. The controls exercised by millions of telephone users over the telephone systems are partly reflected in the demand for telephone service. To the extent that threads of control are summarized in market phenomena, they can be referred to as market controls and be analyzed as such. It is possible to imagine an economy in which all controls consisted of market controls. In such an economy, the policy of every enterprise would be so dominated by market controls reflected in market prices that no significant alternatives in price policy would be left to be influenced by nonmarket controls.[2] In such a case, all controls would be covered by an analysis of markets.

### Nonmarket Controls

However, in practice, market controls only partly determine the use of resources. In many producing units there is a wide latitude of choice in price policy, and economic controls not operating through the market are in effect. The extent of these nonmarket controls is suggested by the prevalence of insensitive administered prices already noted and by the absence of free market prices in a large part of the American economy.[3] Where policies with respect to the use of resources are only limited and not dominated by market controls, the nonmarket controls become a significant factor making for more or less effective use of resources. These nonmarket controls appear to build up into what has here been called a structure of controls, some of minor significance, some of major significance to the functioning of the national economy. The present outline of the structure of controls is concerned only with these major nonmarket controls.

Nonmarket controls may be said to be of major importance when policies affecting a very large number of persons can be significantly influenced. The major policies developed in large administrative organizations, such as an army or a large business corporation, usually are subject to a very considerable measure of nonmarket control and influence the actions of so many people in their use of resources as to be of significance to the functioning of the whole economy. The nonmarket controls exercised by financial institutions through the handling of investment funds, and the nonmarket controls exercised by government through the regulation of business enterprises, through its fiscal policies, through the protection of property and enforcement of contracts, and through other major policies, likewise influence the activities of millions of people and are important to the structure of controls. Persons or groups in a position to influence policies at these points are, for this reason, in a position to influence to a corresponding extent the effectiveness with which the national resources are employed.

The nonmarket controls over policy are seldom sharply defined. Often the threads of nonmarket control build up in such a way as to result in many different foci of control, each focus having to do with some particular phase of activity. Thus, in a big corporation, while the main threads of control over operating policy may come to a focus in the hands of the corporation president, some threads of control are likely to rest with other groups: controls over financial policy may be partly focused in a special finance committee of the board of directors and partly focused in some bank or financial house to which the corporation is under obligation; the threads of control over labor policy may be divided between the corporation and a labor union, some threads focusing in the corporate management and some in the union officials; threads of control over some aspects of policy may rest with the government bodies, as in the case of minimum working standards or public utility regulation; still other threads may rest with some dominant buyer whose orders are so important that he can, within limits, dictate the internal policy of the corporation, say with respect to its policy toward labor organization; or a supplier of raw materials or of services may hold sufficient threads of control to influence or dominate corporate policy in particular respects. Thus, in any concrete situation, there is likely to be a complex network of controls, and a series of foci of varying degrees of importance, each concerned with some particular phase of activity.

The controls which come together at these different foci are sometimes direct and immediate, as in the case of a soldier and his immediate superior officer, or the worker and his shop foreman, but as often they are indirect and intangible. Sometimes they may operate simply through establishing a climate of opinion within which policies are developed. More often they impinge directly on the process of policy formation. The controls which a banker can exercise over a business enterprise may be only indirectly related to the process of borrowing. The controls exercised by Government through its monetary and fiscal policies

[2] Such a conception is, of course, the basis of traditional economic analysis.

[3] It should be noted that the existence of a "price policy" on the part of a functioning firm is prima facie evidence of the presence of nonmarket controls, though it does not indicate their magnitude.

often go largely unnoticed. The controls which a corporation exercises over public opinion through its institutional advertising are far from direct. The whole structure of controls is thus made up of some elements of control which are easily traced and other elements so indirect that their existence can only be surmised.

The actual threads of control may be entirely informal or may be accompanied by a formal setting. For a business enterprise an organization chart may indicate the lines of control and responsibility with respect to its major policies. The corporate charter must set forth in some detail the formal division of controls between different groups of security holders and between the security holders and the management. Sometimes the formal lines of control and the actual lines may differ. In many corporations a majority of the stockholders are, as a matter of form, in a position to control the corporate enterprise, while, as a matter of fact, they are not in position to exercise actual control. Since the formal controls are often more easily ascertained than the actual controls, there is always danger of arriving at a false impression as to the locus of controls in any concrete situation. Only gradually as the concept of controls is further clarified through discussion and as actual economic activity is more closely analyzed will it be possible to give clear definition to the structure of controls.

### The Basis of Controls

In the conduct of economic activity the controls exercised by individuals or groups arise from three main sources: possession of one or more of the factors of production, possession of liquid assets, and position in relation to a functioning organization.

Controls arising out of possession of the factors of production are relatively simple and direct. The farmer possessing land, tools, and seed is to this extent free of outside controls. The manufacturer possessing a factory can limit its use, usually determining when it shall be run and when it shall be closed. A strategically located worker may exercise some control over production through his freedom to quit work. Possession of one or another factor of production is thus one basis of control.

Possession of liquid assets, particularly the possession of salable securities and money, is a second source of economic controls. The possessor of liquid assets is in a position to buy action by others. Sometimes the mere possession of liquid assets without their actual expenditure can influence the action of others, though, for the most part, the controls derived from liquid assets depend on the expenditure of the liquid assets in the market.

The third and, for present purposes, the most important form of the economic controls exercised by individuals or groups arises from their position in relation to some functioning organization. The management of a large corporation may be able to exercise a significant degree of control over the use which is made of resources without itself owning any significant volume of assets. Because of its position in the corporate organization, the management shares in the controls arising from the assets of the corporation and the institutional relationships which develop out of its operations as a going organization. The leaders in a labor organization can exercise some control over production policy as a result of their position in an organization whose influence is based upon the labor factor of production. The leaders in a trade association similarly derive some measure of influence over the use of resources as a result of the organized relationship of its members. A government administrator is in a position to influence the use of resources as a result of his position in the governmental organization. The individuals in such positions do not exercise controls as a result of their own possession of assets but as a result of their organizational position.

The major importance of organizational controls is due, first, to the fact that the most significant nonmarket controls arise from organizations, and second, to the greater relative growth of such organizational controls. The great shift from a dominantly agricultural to a dominantly industrial economy during the last century has tended to expand organizational controls. The increased concentration of production into large corporate units, expansion of government functions, increased financial concentration, and growth of both labor organizations and trade associations all work in this direction. The expansion in the role of organization has reduced the relative importance of market controls and increased that of nonmarket controls to such an extent that market controls no longer dominate economic activity. Nonmarket controls have ceased to be isolated as incidental occurrences and have developed into an interrelated system of controls which is quite as important as the system of interrelated prices in determining the use to which resources are put. It is this system of nonmarket controls and its structure with which the remainder of this chapter is concerned.

### The Structure of Controls

The main essentials in the interrelated structure of controls have to do, first, with the large producing units, their major policies, and the controls over these policies, and, second, with the controls over aspects of the policies of smaller producing units such as can be

exercised by government agencies, financial institutions, trade associations, labor unions, and similar organizations. The major role in the American economy played by the two hundred largest nonfinancial corporations has already been indicated in chapter VII. The nonmarket controls which influence the use of resources made by these separate producers constitute a significant part of the structure of controls and will be examined below in some detail. For smaller producing units, the nonmarket controls are less likely to be significant, except where a number of separate units are subject to the same controls in respect to some phase of their policy as, for instance, where a trade association influences the terms of trade or a labor union influences the terms of work. In such cases it is the controls exercised by the organization influencing some particular aspect of policy for many producers which are important. The nonmarket controls influencing only the policy of the specific small producer can be disregarded because of the relatively minor role played by any one such producer in the national economy. In the following pages an attempt will be made to outline the main elements in the structure of controls, taking up, first, the controls exercised over the larger corporations, giving particular emphasis to the controls exercised by what might be called the corporate community; second, the controls exercised by the more important organizations of economic-interest groupings outside of the larger corporations; and finally, the controls exercised by government.

## Controls over the Larger Corporations

A clear indication of the controls exercised over the larger corporations can be obtained by examining the 200 largest nonfinancial corporations and the larger financial corporations already listed in chapter VII. What persons or groups are in a position to influence the policies of these large corporations? What are the more important nonmarket controls?

### The Separation of Ownership and Control

In an examination of the controls exercised over the larger corporations, first consideration must be given to ownership. It has long been customary to regard the stockholders of a corporation not only as the owners of the corporation but also as the main source of control over its activity. Yet, in practice, ownership of most of the larger corporations has become so dispersed that the stockholders have ceased to be able to exercise a very significant degree of control over corporate policy. Sometimes legal devices such as nonvoting stock and pyramided holding companies have been adopted to divest stockholders of effective control over corporate policy and personnel. On the whole, ownership and control have become separated in the larger corporations.

The inability of stockholders to exercise major control over corporate policies can be suggested by an examination of the stock ownership of the country's largest nonfinancial corporation, the American Telephone & Telegraph Co. At the end of 1935 there were 659,000 stockholders on the books of the corporation, a number almost equal to the number of potential voters living in the five smallest States.[4] The holdings of different sized blocks of stock are indicated in table I.

TABLE I.—*Distribution of stock ownership, American Telephone & Telegraph Co., 1935*

| Number of shares held | Number of holders | Percent of stockholders | Percent of total number of shares |
|---|---|---|---|
| 1–5 | | 36.8 | 3.8 |
| 6–10 | | 20.7 | 6.1 |
| 11–25 | | 22.5 | 13.2 |
| 26–99 | | 15.9 | 26.4 |
| 100–999 | | 5.0 | 33.9 |
| 1,000–9,999 | | .1 | 11.4 |
| 10,000 and over | 43 | | 5.2 |

Source: *Annual Report of the American Telegraph & Telephone Co.* for 1935.

The 43 largest stockholders, each owning 10,000 shares or more, together owned only 5.2 percent of the total stock, while the 700 holding 1,000 or more shares together held only 16.6 percent. In this largest of all corporations, stock ownership is so widely dispersed that no one person or small group is in a position to dominate the corporation as a result of stock ownership. Neither are stockholders as a group in a position to exercise significant control over corporate policy through majority vote. The policies of the corporation have seldom been presented to the stockholders for a vote before adoption,[5] and even in the usual vote for corporate directors the proxy machinery usually eliminates any significant control by stockholders.[6] As a result, control over the policies of the American Telephone & Telegraph Co. lies only to a minor extent with its stockholders.

While the dispersion of ownership and the corresponding separation of ownership and control has developed to a high degree in the case of this largest of corporations, it has carried to a considerable degree in most of the larger corporations. In the study of large corporations by Berle and Means,[7] it was shown that

[4] The number of potential voters is defined as that portion of the population which is 21 or more years of age. The five smallest States with respect to population are Nevada, Wyoming, Vermont, New Mexico, and Delaware.

[5] Corporate charters often contain specific provisions requiring a majority vote of stockholders on certain problems of policy such as a proposal for issuing new stock, but this type of voting is not usually concerned with the main essentials of corporate policy.

[6] See *The Modern Corporation and Private Property*, by A. A. Berle, Jr., and G. C. Means, New York, 1932, book I, ch. V.

[7] *Op. cit.*, book I, ch. V.

of the 200 largest nonfinancial corporations in 1929, only 11 percent were clearly controlled on the basis of majority stock ownership, while in the case of 65 percent of the 200 corporations representing 80 percent of their combined assets, the ownership of stock was so widely dispersed or so shorn of powers through some legal device that stockholders were not in a position to influence corporate policy to a major degree.

The same indication of a high degree of separation of ownership from control is disclosed in a more recent study based on information filed with the Securities and Exchange Commission.[8] Many corporations are required to file with the Commission information on the total stockholdings of their officers and directors and the stockholdings of other individuals and corporations holding 10 percent or more of any of their voting issues. This information was available at the end of the year 1935 for 155 of the 200 large corporations listed by Berle and Means. A compilation based on these data is given in table 11.

TABLE 11.—*Stockholdings of controlling groups*

[Distribution of 155 large corporations according to proportion of voting stock owned by officers, management, and control group]

| Proportion of stock outstanding (percent) | Number of companies | | |
|---|---|---|---|
| | All officers | Management (all officers and directors) | Control group (officers, directors and stockholders with 10 percent of any voting stock issued) [1] |
| 0–1 | 96 | 61 | 73 |
| 1–3 | 25 | 30 | |
| 3–5 | 10 | 21 | |
| 5–10 | 15 | 16 | 24 |
| 10–15 | 3 | 11 | |
| 15–50 | 4 | 14 | 43 |
| 50 and over | 2 | 2 | 15 |
| | 155 | 155 | 155 |
| Median holding as percent of voting power | .40 | 1.74 | 5.40 |

Source: See footnote 8, below.

[1] Includes both stockholdings by other corporations and by individuals. A large proportion of the stockholders holding 10 percent or more of any voting stock issue were other corporations.

For nearly half of these 155 big companies no one stockholder owned more than 10 percent of the voting stock, and the officers and directors together owned less than 5 percent of the outstanding stock. In only 15 companies did the officers, directors, and large stockholders appear to own 50 percent or more of the voting stock, and in several of these cases the large stockholders were other corporations. For the 155 corporations as a whole the control groups owned approximately 12.4 percent of the voting stock.[9] Since this figure includes substantial stockholdings by other corporations, the stockholdings by individuals in a position to exercise dominant control over these corporations must have been appreciably less than 12.4 percent of the total voting stock outstanding. No corresponding information is provided on the remaining 45 corporations. 21 of them had dissolved, merged or gone into receivership, 16 did not have to file such information with the Commission because their stocks were not listed on any public exchange, and eight were not included in the compilation for miscellaneous reasons. Presumably, the stocks of the 16 corporations not listed on any exchange were closely held and largely subject to control by their owners, while in the case of the 15 companies in receivership, control over policy was almost completely taken away from the owners by court action.

It is clear, therefore, that for most of the largest corporations ownership and control have become largely separated. This condition appears to be particularly characteristic of the corporations which have travelled furthest along the road of corporate development, such as the railroads and others of the older corporations. The lack of significant stockholder control over corporate policies may be regarded as the typical condition toward which the large corporate units have been tending. The main controls must be looked for elsewhere.

## Management the Center of Policy Formation

Since the owners of the larger corporations do not in most cases exercise a significant degree of control over corporate policy, attention must be shifted to the management which is at the center of the forces influencing policy formation. The officers and directors of a corporation are responsible for the development of policies and their execution. Together, the officers and directors are usually in a position to exercise a large measure of control over corporate affairs.

The separate roles of directors and of officers in policy formation vary from corporation to corporation and have been too little studied to make possible any precise distinction between their respective roles. The process of policy formation is a highly complex one in which many persons and groups may take part. To what extent the directors as a group usually act as a body of review for the policy proposals developed by the officers of a corporation, and to what extent they initiate policies is not clear and presumably varies from corporation to corporation. It is sufficient for this outline of the structure of controls to recognize that policy formation for most of the large corporations centers in the management, consisting of both officers and directors. Once this is recognized, it is possible to treat each producing unit as a going organization in which policy is continuously being formed and efforts made to carry it out. The management at the center of this process influences

[8] Robert A. Gordon, "Ownership by Management and Control Groups in the Large Corporation," *Quarterly Journal of Economics*, May 1938.

[9] Average of percent holdings by control groups when weighted by number of shares of voting stock, each share being multiplied by the number of votes attached to it.

policy to a major extent as a result of its position in the organization, while a variety of both market and nonmarket controls limit the controls which the management itself is in a position to exercise.

The more important nonmarket controls impinging on corporate managements can roughly be grouped into three categories, (1) the corporate community, (2) other organized interest groups, and (3) government.

## The Corporate Community

If each corporate management were quite independent of every other corporate management and subject only to market controls in its development of policy, the structure of nonmarket controls might be of only secondary importance. In fact, however, there is a great deal of interrelationship between corporate managements. Partly through interlocking directorates, partly through the activities of the major financial institutions, partly through particular interest groupings, partly through firms rendering legal, accounting, and similar services to the larger corporations, and partly through intercorporate stockholdings, the managements of most of the larger corporations are loosely brought together in what might be called the corporate community.

### Interlocking Directorates

The formal interrelationships between the larger corporations brought about through interlocking directorates can be seen by examining the directorates of the 200 largest nonfinancial corporations and the 50 largest financial corporations already listed in chapter VII.[10] In 1935 only 25 of these corporations had no director in common with at least one other corporation on the list.[11] One corporation, the Western Union Telegraph Co., interlocked with 35 other corporations on the list. An indication of the interlocking between the 250 corporations is given in chart 1, which shows all the interlocks between each of the 100 corporations having the most interlocks and between these and all the other corporations in the list of the 250 largest. The 100 corporations with the most interlocks are listed in the vertical columns in order of the frequency of interlocks, while the same corporations plus all the others among the 250 corporations with which they interlock are listed horizontally. The interlocks are indicated in the respective squares.[12] Other interlocks not shown in the chart are given in appendix 12, table VI.

Altogether there were 3,544 directorships on the boards of these 250 corporations in 1935, and these positions were held by 2,725 individual directors. The distribution of the directorships, among individuals, is shown in table III. Between them, 400 men held nearly a third of these directorships; 1,000 men held over half.

TABLE III.—*Number of directors and their holdings of directorships in 200 largest nonfinancial and 50 largest financial corporations, 1935*

| Number of directorships held by a single individual | Total number of directors | Total number of directorships held | Cumulative number | |
|---|---|---|---|---|
| | | | Directors | Directorships |
| 9 | 1 | 9 | 1 | 9 |
| 8 | 3 | 24 | 4 | 33 |
| 7 | 6 | 42 | 10 | 75 |
| 6 | 6 | 36 | 16 | 111 |
| 5 | 19 | 95 | 35 | 206 |
| 4 | 48 | 192 | 83 | 398 |
| 3 | 102 | 306 | 185 | 704 |
| 2 | 303 | 606 | 488 | 1,310 |
| 1 | 2,234 | 2,234 | 2,722 | 3,544 |
| Total | 2,722 | 3,544 | | |

Source: See appendix 12, table VII.

The extent of this interlocking and the magnitude of the assets involved are indicated in table IV. Out of the 250 corporations, 151 companies, whose assets amounted to nearly three-quarters of the combined assets of the 250, were interlocked with at least three other companies in the group. There can thus be no question of the very extensive formal interlocking of the large corporations.

Just how important for policy formation these interlocks may be is a much more difficult matter to determine. It would be easy to overestimate their importance, since many directors are relatively inactive. On the other hand, it might be equally easy to underrate the influence on policy which results from the climate of opinion developed in part through these interlocks. That the interlocks are not primarily brought about through inactive directors is suggested by the fact that 59 of the 83 directors holding 4 or more directorates in this group of corporations were in an active position in at least one of the corporations they served, being chairman of one of the boards, a member of an executive or finance committee or an executive officer of the corporation.[13] Such men are likely to take a responsible share in the development of policy in any corporation in which they hold a responsible position. But until more study has been given to the process of policy formation, the actual role of interlocking directorates cannot be clearly determined.

### Intercorporate Minority Stockholders

A second influence tying together many of the large corporations results from extensive intercorporate stockholdings. In the case of at least 30 of the 250 large corporations, 10 percent or more of the voting

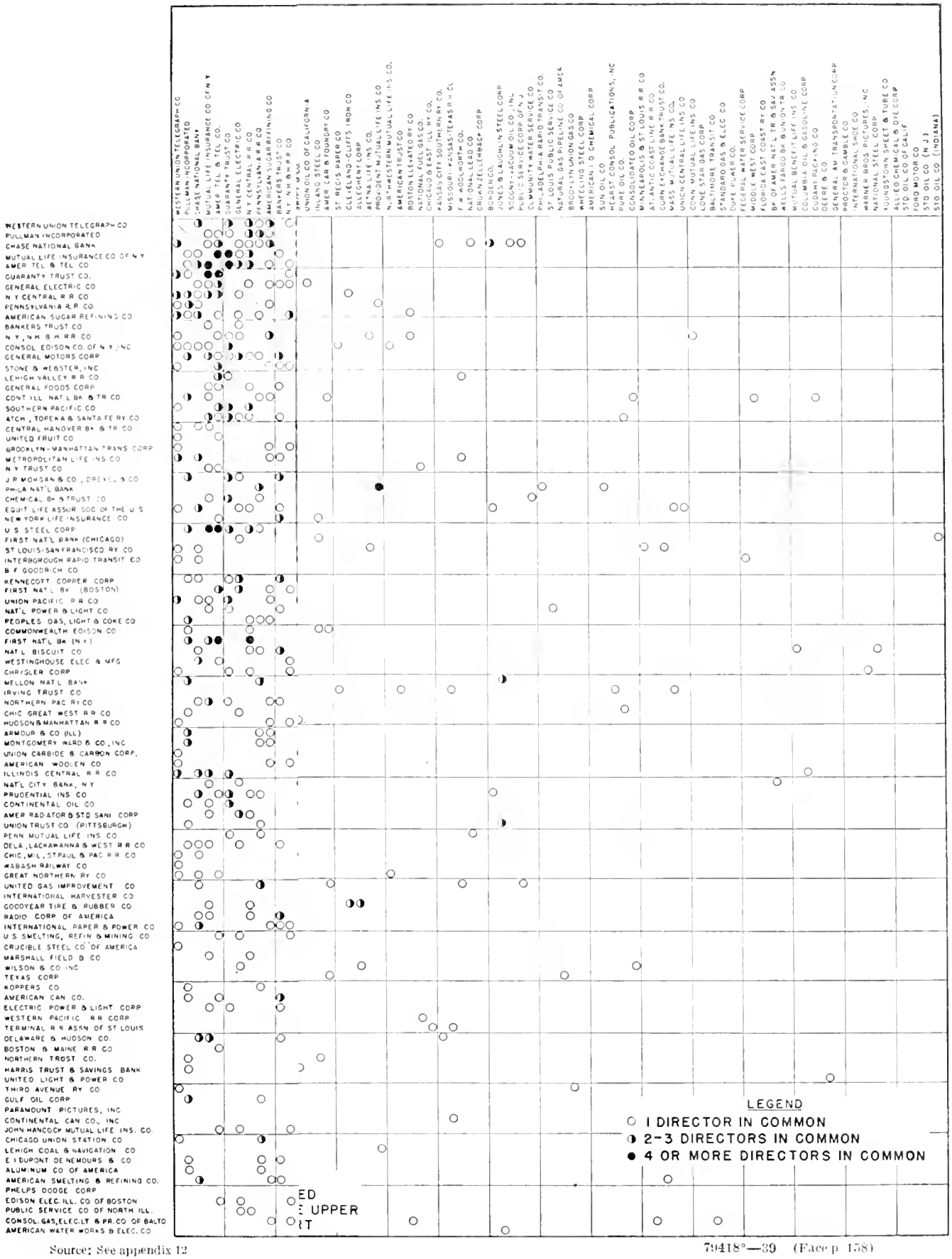
[10] See appendix 12.

[11] Appendix 12, table II

[12] It should be noted that, since the chart sets forth the interlocks of each corporation with other corporations, each interlock between the 100 corporations appears twice, once opposite the name of each of the corporations interlocked.

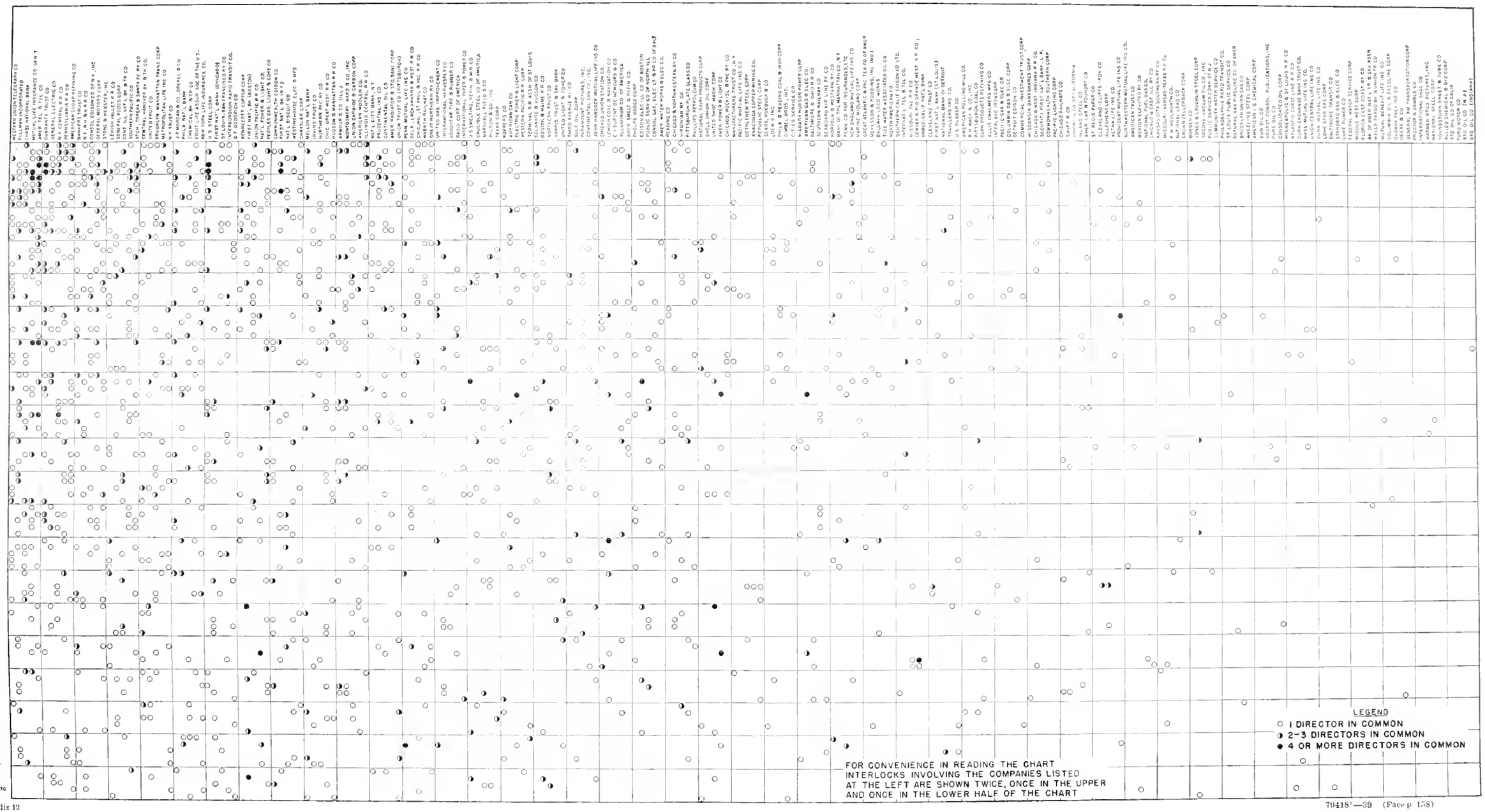
[13] See appendix 12

# INTERDER OF NUMBER OF INTERLOCKS




Source: See appendix 12

# INTERLOCKING DIRECTORATES AMONG 250 LARGE CORPORATIONS, 1935 ARRANGED IN ORDER OF NUMBER OF INTERLOCKS




Source: See appendix 12

TABLE IV.— *Corporations interlocking with one or more other corporations among 200 largest nonfinancial and 50 largest financial corporations, 1935*

| Type of corporation | All corporations | | Corporations interlocking with one or more other companies | | | Corporations interlocking with two or more other companies | | | Corporations interlocking with three or more other companies | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Number | Total assets | Number | Assets | Percent of total assets | Number | Assets | Percent of total assets | Number | Assets | Percent of total assets |
| Industrial | 107 | $25,140.6 | 91 | $23,022.3 | 91.6 | 71 | $16,261.9 | 64.7 | 60 | $14,645.5 | 58.3 |
| Utilities | 54 | 25,232.6 | 46 | 22,886.3 | 90.7 | 34 | 20,153.2 | 79.9 | 26 | 16,049.6 | 63.6 |
| Railroads | 39 | 23,871.0 | 38 | 23,705.9 | 99.3 | 36 | 22,796.2 | 95.5 | 31 | 20,146.1 | 84.1 |
| Banks | 30 | 20,707.6 | 30 | 20,707.6 | 100.0 | 28 | 20,223.5 | 97.7 | 22 | 16,921.3 | 81.7 |
| Other financial | 20 | 19,959.4 | 20 | 19,959.4 | 100.0 | 18 | 19,045.8 | 95.4 | 12 | 16,095.1 | 80.6 |
| All corporations | 250 | 114,911.2 | 225 | 110,281.5 | 96.0 | 187 | 98,480.6 | 85.7 | 151 | 83,857.6 | 73.0 |

Source: Number of companies derived from chart I, chap. IX and from table VI of appendix 12; the assets are obtained from appendix 10, table I and appendix 12, table I.

power derived from stock ownership was held directly or indirectly by another corporation in the group or by one of the 9 financial or holding companies not included in the list of 250 corporations but clearly part of the corporate community.[14] In all but one of these cases, the corporate stockholders were the only stockholders with 10 percent or more of the voting power. These holdings are listed in table V for those 7 of the 250 corporations filing such information with the Securities and Exchange Commission or with the Interstate Commerce Commission.

It is clear that while none of these corporations are legally controlled by another corporation, they are not entirely independent of each other. Often, a corporation holding 10 percent or more of the stock of another corporation can influence the policies of the latter to a significant extent and in many cases even determine its management.[15] Such large intercorporate stockholdings and the many smaller holdings of a similar character help to build up the interrelationships between the big corporations which form the basis of the corporate community.

#### Interrelationships Resulting from the Servicing of the Large Corporations

A third factor binding the larger corporation into a corporate community derives from the activity of the firms which provide these large corporations with financial, legal, accounting, and similar services. Of these services, the financial are undoubtedly the most important. In the single year, 1935, 175 of the 200 largest nonfinancial corporations issued new securities. This meant that in most cases they had to call on one or more of the financial or investment firms to underwrite and distribute these issues. Most of such financing is handled by a very small number of firms. According to figures obtained from the Securities and Exchange Commission, 56 percent of all the corporate underwriting in 1935 was initiated by only 10 firms.

As an almost necessary result of such activity, each of the more important investment firms is drawn ultimately into the affairs of a number of the big corporations.

The more important accounting firms also act, though presumably to a lesser extent, as a binding force in the corporate community. The ten largest accounting firms certified 52 percent of the accounts of all the accounting firms (754 in number).[16]

In the same way, the leading legal firms, advertising firms, engineering firms, public relation counsellors, and espionage firms are apt to have a score or more of the larger corporations as their clients and come into intimate contact with one or another phase of their major policy problems.

All of these firms rendering special services to the big corporations necessarily deal with some important phase of corporate policy for each of the corporations which they serve. Almost inevitably they contribute in conferences and individual discussions to that climate of opinion within which corporate policies are formed, carrying from one corporation to another some degree of common background and temper of thought which adds a measure of unity to the corporate community.

#### Interrelationships Resulting from the Control over Investment Funds

A fourth factor making for interrelationship among the larger corporations results from the activities of the larger financial corporations in the use which they make of the investment funds at their disposal.[17] In 1935,

[14] Wherever more than 50 percent of the voting power of one corporation was controlled directly or indirectly by another corporation, the former has been treated in this report as a subsidiary of the latter and not as an independent corporation.

[15] The financial community often speaks of a 20–30 percent stock ownership as constituting "working control."

[16] Based on the period Jan. 1, 1925 through Dec. 31, 1935; data furnished by the Securities and Exchange Commission.

[17] It is often held that control over the larger nonfinancial corporation centers in the larger banks and insurance companies. This may have been the relationship which developed in other countries in which banking concentration has been carried to a very much greater extent than in the United States. In this country, however, there is much evidence that, though the larger banks and insurance companies are an integral part of the corporate community and are dominated by much the same group of individuals, the basis of controls in the corporate community is too diffuse to justify the statement that control centers in the banking institutions. A bank is quite as likely to be dominated by an industrial, railroad, or utility group as to dominate such a group. Unquestionably, the banks and insurance companies play a significant role in the structure of controls, but more as one of the many bases for the controls exercised by the dominant groups than as the center of such controls. See below pp. 160–163.

TABLE IV.—*Corporations interlocking with one or more other corporations among 200 largest nonfinancial and 50 largest financial corporations, 1935*

| Type of corporation | All corporations | | Corporations interlocking with one or more other companies | | | Corporations interlocking with two or more other companies | | | Corporations interlocking with three or more other companies | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Number | Total assets | Number | Assets | Percent of total assets | Number | Assets | Percent of total assets | Number | Assets | Percent of total assets |
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It is clear that while none of these corporations are legally controlled by another corporation, they are not entirely independent of each other. Often, a corporation holding 10 percent or more of the stock of another corporation can influence the policies of the latter to a significant extent and in many cases even determine its management.[15] Such large intercorporate stockholdings and the many smaller holdings of a similar character help to build up the interrelationships between the big corporations which form the basis of the corporate community.

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[17] It is often held that control over the larger nonfinancial corporation centers in the larger banks and insurance companies. This may have been the relationship which developed in other countries in which banking concentration has been carried to a very much greater extent than in the United States. In this country, however, there is much evidence that, though the larger banks and insurance companies are an integral part of the corporate community and are dominated by much the same group of individuals, the basis of controls in the corporate community is too diffuse to justify the statement that control centers in the banking institutions. A bank is quite as likely to be dominated by an industrial, railroad, or utility group as to dominate such a group. Unquestionably, the banks and insurance companies play a significant role in the structure of controls, but more as one of the many bases for the controls exercised by the dominant groups than as the center of such controls. See below pp. 160–163.

TABLE V.—*Holdings by the 250 large corporations of more than 10 percent of voting stock of the 200 largest nonfinancial corporations, Dec. 31, 1935* [1]

| Corporation issuing stock | Corporation holding more than 10 percent of the outstanding votes | Percent of votes held |
|---|---|---|
| Allied Chemical & Dye Corporation. | Solvay American Investment Corporation. | 22.6 |
| Atlantic Coast Line R. R. Co. | Atlantic Coast Line Co. | 26.9 |
| Boston & Maine R. R. Co. | Pennroad Corporation | 19.3 |
| | New York, New Haven & Hartford R. R. Co [2] | 26.2 |
| Brooklyn Union Gas Co. | Kopper's Gas & Coke Co. | [3] 23.9 |
| Chicago & Eastern Illinois Ry. Co | Virginia Transportation Corporation | [4] 42.7 |
| Chicago, Rock Island & Pacific Ry. Co. | St. Louis-San Francisco Ry. Co. | 14.2 |
| Consolidated Oil Corporation | Petroleum Company of America | 11.3 |
| Denver & Rio Grande Western R. R. Co. | Missouri Pacific R. R. Co. | [5] 50.0 |
| | Western Pacific R. R. Corporation | [5] 50.0 |
| Detroit Edison Co. | American Light & Traction Co. | 16.2 |
| | North American Co. | 19.0 |
| Electric Power & Light Corporation. | Electric Bond & Share Co. | 56.6 |
| Illinois Central R. R. Co. | Union Pacific R. R. Co. | [6] 29.0 |
| International Paper & Power Co | Chase National Bank | 15.3 |
| Lehigh Valley R. R. Co. | Pennsylvania R. R. Co. (indirectly held through the Pennsylvania Co.). | [7] 30.1 |
| Missouri Pacific R. R. Co. | Alleghany Corporation | 46.4 |
| National Power & Light Co. | Electric Bond & Share Co. | 47.1 |
| | Lehigh Coal & Navigation Co. | 12.8 |
| Norfolk & Western Ry. Co. | Pennsylvania Railroad Co. (held directly and indirectly through the Pennsylvania Co.). | [8] 44.5 |
| Pacific Gas & Electric Co. | North American Co. (held directly and indirectly through Western Power Corporation). | [9] 15.3 |
| Philadelphia & Reading Coal & Iron Corporation. | National City Bank, trustee | [3] 25.2 |
| | Baltimore & Ohio R. R. Co. (proportionate share in above trust). | [3] 21.7 |
| Public Service Corporation of New Jersey. | United Corporation | 13.9 |
| | United Gas Improvement Co. | 28.6 |
| Public Service Company of Northern Illinois. | Commonwealth Subsidiary Corporation. | 28.6 |
| Reading Co. | Baltimore & Ohio R. R. Co. | 42.2 |
| | New York Central R. R. Co. | 25.0 |
| | Cleveland Cliffs Iron Co. | 10.3 |
| Republic Steel Corporation | Pennroad Corporation | 13.9 |
| Seaboard Air Line Ry. Co. | Standard Power & Light Corporation | 53.6 |
| Standard Gas & Electric Co. | Kopper's Gas & Coke Co. | 28.1 |
| United Light & Power Co. | Pennsylvania R. R. Co. (indirectly held through Pennsylvania Co.) | [10] 56.2 |
| Wabash Ry. Co. | Raltimore & Ohio R. R. Co. (deposited with Chase National Bank as trustee). | [11] 41.8 |

[1] Compiled from materials published by the Securities and Exchange Commission and from information in *Moody's Investment Manuals, 1936*. For details of procedure and definition, see appendix 18, section 25.

[2] This block of stock is held through a subsidiary, the Boston Railroad Holding Co., 100 percent of whose common stock is owned by the parent.

[3] Owner disclaims beneficial interest. See appendix 18, section 25, for discussion.

[4] This company is a subsidiary of the Chesapeake & Ohio Ry. Co. The parent does not admit beneficial interest in the stock of the Chicago & Eastern Illinois Ry. Co.

[5] *Moody's Manuals, 1936*, "Joint Control: Company is controlled by Western Pacific R. R. Corporation and Missouri Pacific R. R. Co.".

[6] 23.8 percent of the voting power of the Illinois Central R. R. Co. is held by the Union Pacific R. R. Co. directly, the remaining 5.2 percent is held by the Railroad Securities Co., whose entire capital stock is, according to *Moody's Manuals*, owned by "Kansas City Industrial Land Co., which is affiliated with Union Pacific R. R.". The proportion of this 5.2 percent owned by the Union Pacific cannot be determined inasmuch as the precise nature of the relationship between Kansas City Industrial Land Co. and Union Pacific is not clear.

[7] The Pennsylvania R. R. Co. owns all of the outstanding stock of the Pennsylvania Co.

[8] The Pennsylvania R. R. Co. is reported by the Securities and Exchange Commission to own what is computed at 25.1 percent of the voting stock of the Norfolk & Western Ry. Co. directly. The Pennsylvania Co., all of whose outstanding stock is owned by the Pennsylvania R. R. Co., owns 28.2 percent more but the proportionate interest of the parent company (Pennsylvania R. R. Co.) is not disclosed. According to Moody's the Pennsylvania R. R. Co. owns 44.5 percent of the voting stock of the Norfolk & Western Ry. Co.

[9] This figure represents the estimated holdings, directly and indirectly, of the North American Co. in the Pacific Gas & Electric Co. Computations from Securities and Exchange Commission and Moody's data show that 9.1 percent of the votes of the latter are held directly. The Western Power Corporation, a subsidiary of the North American Co., is reported to have held 10.8 percent of the votes of the Pacific Gas & Electric Co. However, an analysis of the balance sheet of the Western Power Corporation and of the holdings of the North American Co. show that the latter holds about 57 percent equity in the former. The stock of the Pacific Gas & Electric Co. is almost the sole asset of the Western Power Corporation; so 57 percent of the 10.8 percent amounts to 6.2 percent of the votes outstanding in the Pacific Gas & Electric Co., bringing the holdings of the North American Co. to 15.3 percent of the voting power, which figure is entered in the table.

[10] Pennsylvania Co. is related to Pennsylvania R. R. Co., as described in [7] above. According to *Moody's Manuals, 1936*, the more accurate figure is 48 percent.

[11] The proportionate interest of the Baltimore & Ohio R. R. Co. is not shown although the railroad is probably owner of the entire amount.

banks, insurance companies, and similar financial corporations owned approximately a quarter of all the outstanding bonds of American corporations.[18] No figures are available on either the bonds of the larger corporations which are owned by the larger banks and insurance companies or the extent to which the leading financial institutions have provided funds to the larger corporations on the basis of short-term loans. Both sums must be of considerable magnitude and the basis of very real influence over corporate policies. Some controls are likely to arise at the time debts are being incurred, but most particularly they arise when difficulty is met with in the repayment of debts. Banks or insurance companies once having loaned funds to a corporation, or having purchased its bonds, must keep in close touch with its activities. If the corporation gets into financial difficulties, they are directly concerned in keeping it solvent or with its reorganization. Because of the magnitude of the funds for which they are responsible, the financial institutions are often able to exercise a major influence in such proceedings and, after reorganization, to occupy a strategic position in relation to the reorganized corporation. Thus, as a result of the investment funds which they control and the opportunities which arise in connection with their use, the relatively small number of large financial institutions tends to increase the interrelationship in the corporate community.

#### Corporate Interest Groupings

When the interrelationships between the larger corporations are carefully examined, company by company, groupings of more closely related companies emerge. Sometimes several corporations are closely bound together, as in the case of the Electric Bond & Share Corporation and the three major systems in which it owns a large minority interest and which it manages on a contractual basis. Sometimes corporations have several directors in common as in the case of the United States Steel Corporation and the American Telephone & Telegraph Co. with four common directors, and Pullman, Inc. whose directorate of 14 included in 1935 two partners of J. P. Morgan & Co. and four representatives of the First National Bank of New York. Such a large number of common directors combined with other evidences of close association is taken to be sufficient grounds, not for classifying the corporations as subject to the same control, but as subject to some measure of common influence and properly classed as belonging to a common interest group. More often the basis for grouping corporations together is less concrete and grows out of an examination of the historical background of each corporation, as well as its current

[18] Twentieth Century Fund, Inc., *Debts and Recovery*, New York, 1938, p. 287.

position. Interlocking directorates alone are not sufficient evidence of a close interrelationship between corporations. Neither is the possession of a minority stock interest alone evidence of close association. Nor is a single instance of the underwriting of a corporation's securities by a particular investment house evidence of a close association between the two. But when a corporation was initially promoted by a particular investment firm, when all its new security issues are handled by that firm, when the two have directors in common, and when other evidence of a less precise nature points to a close association between the companies, it seems appropriate to treat them as part of a single interest group.

A grouping of corporations on a basis of such evidence rests to a very considerable degree on matters of judgment. No hard and fast classification of corporations into interest groups can be made, partly because of the difficulties of establishing the actual interrelationships in each situation and partly because of the uncertainty as to when the interrelationships are sufficiently close to justify classing corporations as part of a single interest group. Yet the evidence that such interest groups exist is so overwhelming that an effort has been made to outline the most important of such groups, at least in a tentative form.

A careful study of the interrelationships between the large corporations disclosed eight more or less clearly defined interest groups which so far overshadowed other groups as to justify the limitation of consideration to these eight groups. In appendix 13, these eight groups are delineated and described in some detail. Together they include 106 of the 250 larger corporations[19] and nearly two-thirds of their combined assets. The eight groups, each named according to some characteristic of the group, are listed in table VI, with an indication of the assets falling within each group. No attempt is made to include the assets of smaller corporations falling within the same sphere of influence though many such could be named. In chart II the 106 corporations included in these eight groups are so arranged as to show the interlocking directorates interconnecting these corporations and also the interlocks with 122 other large corporations not included in the eight groups. Though interconnection through common directors was only one type of evidence used in grouping the corporations, the chart clearly brings out the closer relationship between the companies grouped together than those not so grouped. In 16 cases corporations grouped together had four or more directors in common and in 73 cases had two or three directors in common.

[19] This consists of the 200 largest nonfinancial corporations shown in appendix 10 and the 50 largest banks by total resources as reported in Moody's *Banks* for 1936.

TABLE VI. *Eight interest groups and their assets, 1935* [1]

[Millions of dollars]

| | Morgan First National | Rockefeller | Kuhn, Loeb | Mellon | Du Pont | Chicago | Cleveland | Boston | Total assets |
|---|---|---|---|---|---|---|---|---|---|
| Industrials | 3,920 | 4,262 | 0 | 1,648 | 2,232 | 858 | 1,066 | 425 | 14,411 |
| Rails | 9,678 | 0 | 9,963 | 153 | 0 | 0 | 0 | 0 | 19,794 |
| Banks | 4,421 | 2,351 | 548 | 672 | 396 | 2,595 | 338 | 740 | 12,061 |
| Utilities | 12,191 | 0 | 342 | 859 | 0 | 813 | 0 | 554 | 14,759 |
| Total assets | 30,210 | 6,613 | 10,853 | 3,332 | 2,628 | 4,266 | 1,404 | 1,719 | 61,025 |

[1] For a discussion of the interest groups and the allocation of corporations to them, see Appendix 13; the assets are derived from table I of appendix 10, and from Moody's *Banks* for 1936.

The largest of the eight interest groups, that classified as the Morgan-First National group, includes 41 of the 250 larger corporations. It has been referred to as the Morgan-First National group, not because the separate companies are controlled by either J. P. Morgan & Co. or by the First National Bank of New York or by these two institutions in combination but rather because much of the interrelation between the separate corporations allocated to this group is brought about through these two institutions. Morgan & Co. and the First National have had a long history of close working relationships begun by the elder J. P. Morgan and the elder George F. Baker and subsequently developed on an institutional basis. Of the 39 corporations grouped with these 2 financial institutions, 10 had 2 or more directors in common with J. P. Morgan & Co. in 1935. However, information on interlocking directorates was in most cases incidental to the classification of a corporation to this particular group. In the case of 15 corporations classed with the Morgan-First National group, there was no interlocking of directorates with either of the 2 financial institutions while in 4 cases, corporations included in the 250 large corporations, were interlocked by directors with 1 or both of these institutions, but were not included in the 41 corporations constituting the interest group because other evidence pointed to the absence of a close relationship or was insufficient to substantiate such a relationship.

The corporations assigned to the Morgan-First National group include outstanding enterprises in most of the major lines of economic activity. The group is made up of 13 industrial corporations headed by the United States Steel Corporation and including corporations mining iron ore, copper, and coal, extracting oil, making steel and brass, fabricating electrical equipment, railway equipment, and plumbing and heating apparatus, and supplying bakery products, mail-order services, and Pullman services; 12 utility corporations, including the American Telephone & Telegraph Co., the International Telephone & Telegraph Co., and power companies controlling, in 1935, 37 percent of the electric-generating capacity of the country, 11 major railroads

or railroad systems controlling 26 percent [20] of the first-class railroad mileage of the country; and 5 financial institutions including the 2 for which the group has been named. While it is certain that the extensive economic activity represented by these corporations is in no sense subject to a single centralized control, it is equally certain that the separate corporations are not completely independent of each other. The climate of opinion within which their separate policies are developed is much the same, many of the same people participate in the formulation and review of the policies of the separate corporations, financing is carried on for the most part through the same channels, and in many other ways this group of corporations constitutes an interrelated interest group.

The second interest group in importance has been named the Kuhn-Loeb group and consists primarily of railroads whose financing has for many years been handled by Kuhn-Loeb & Co. It includes 13 major railroads or railroad systems which together controlled approximately 22 percent [21] of the first-class railroad mileage in the country in 1935, The Western Union Telegraph Co., and one bank. Since it has never been the policy of Kuhn-Loeb & Co. to maintain more than a few of its contacts by means of directorships, these corporations are not linked to Kuhn-Loeb & Co. through directors except in three cases. There appears to be a much less close grouping of these corporations than in the case of most of those assigned to the Morgan-First National group.

While the two largest interest groups stem primarily from the activities of financial institutions, three interest groupings stem to a large extent from family interests not growing directly out of financial institutions. These are the groups named, respectively, as the Rockefeller, the Mellon, and the Du Pont groups. The largest of these, the Rockefeller group, includes six large oil companies and one bank. The oil companies are all successors to the old Standard Oil Co. which was dissolved by court decree in 1911, and together they control more than half the assets of the oil industry. In each of these companies, John D. Rockefeller and Rockefeller-endowed institutions together hold significant minority stock interests, usually the only large stock interests, representing from 7 to 24 percent of the voting power in the different companies. Just how much control is exercised by Mr. Rockefeller over these companies is not clear. Very possibly it is mostly negative, but none the less real. Without going so far as to class these corporations as under common control, it is appropriate to treat them as belonging to a single interest group. The largest bank in the country, the Chase National Bank, is also assigned to this interest group on grounds indicated in appendix 13.

The second of the family interest groups, the Mellon group, rests to a very much larger extent on ownership than is the case with the other groups covered. It includes nine industrial corporations, one railroad, two utilities, and two banks. In the case of at least six of these corporations, a majority of the outstanding stock appears to be held by members of the Mellon family and their immediate associates. These closely held companies include the Aluminum Company of America, the Gulf Oil Corporation, the Pittsburgh Coal Co., and the Koppers Co., which indirectly controls many gas manufacturing plants. Most of the companies in this group center in Pittsburgh. Two Pittsburgh banks included in the group appear to be simply an integral part of the interest group rather than the center from which it derives its unity.

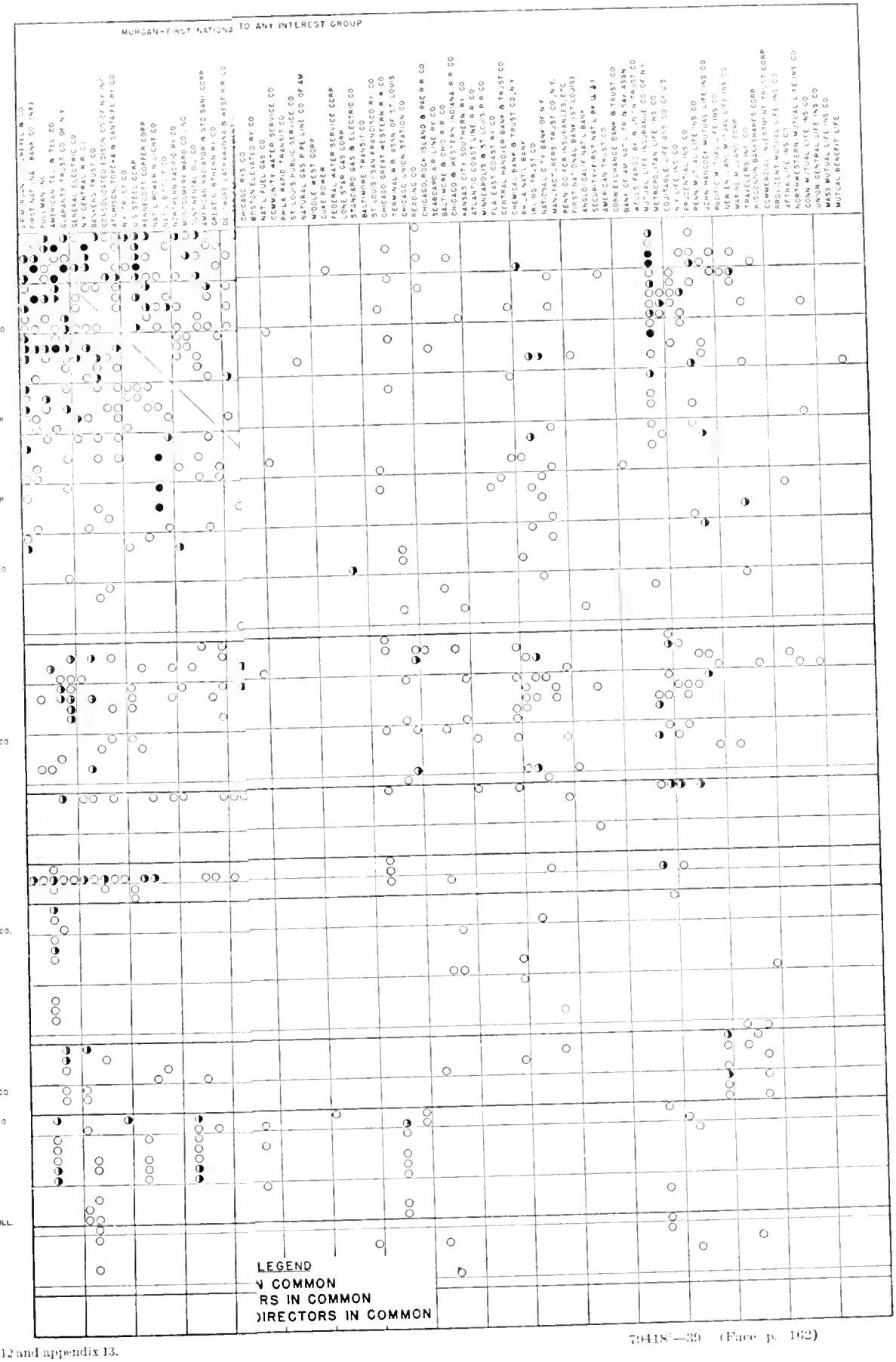
The third family group, the Du Pont group, includes only four companies, three industrials, and one bank, but all of these are of top rank in respect to size. Control over the separate companies arises primarily from substantial minority stock holdings. One Du Pont family holding company owned approximately 25 percent of the voting stock of the E. I. du Pont de Nemours Co., which, in turn, owned approximately the same proportionate interest in the General Motors Corporation. Another family holding company owned approximately 20 percent of the voting power in the United States Rubber Co. In each of these cases the minority stock holdings were sufficient to give the Du Pont interests working control in the corporations listed and the management of these companies reflects this fact. The bank included in this interest group appears to be incidental to the composition of the group.

The remaining three of the eight major interest groups appear to stem neither from particular financial institutions nor from particular families but rather to bring together corporations whose activity centers in particular localties. For this reason they have been named for the regions in which they center, the Chicago group, the Boston group, and the Cleveland group. In each case the group includes one or more banks located in the center for which the group is named, industrial activities carried on in the vicinity, such as meat packing in Chicago, shoe machinery in the vicinity of Boston, and steel in the Cleveland area, and in the case of two of the groups, local utilities. Just how closely knit these groups are it is not possible to say, but there can be little doubt that they exist as roughly interrelated groups.

While only 90 of the 200 larger nonfinancial corporations have been included in one or another of the eight groups, there are others with which one or another of these groups is fairly closely related. The International Paper and Power Corporation might properly be classed

[20] Interstate Commerce Commission, *Statistics of Railways in the United States*, 1935
[21] *Ibid.*

# INTERLOCKING TO INTEREST GROUPINGS




Source: See appendix 12 and appendix 13.

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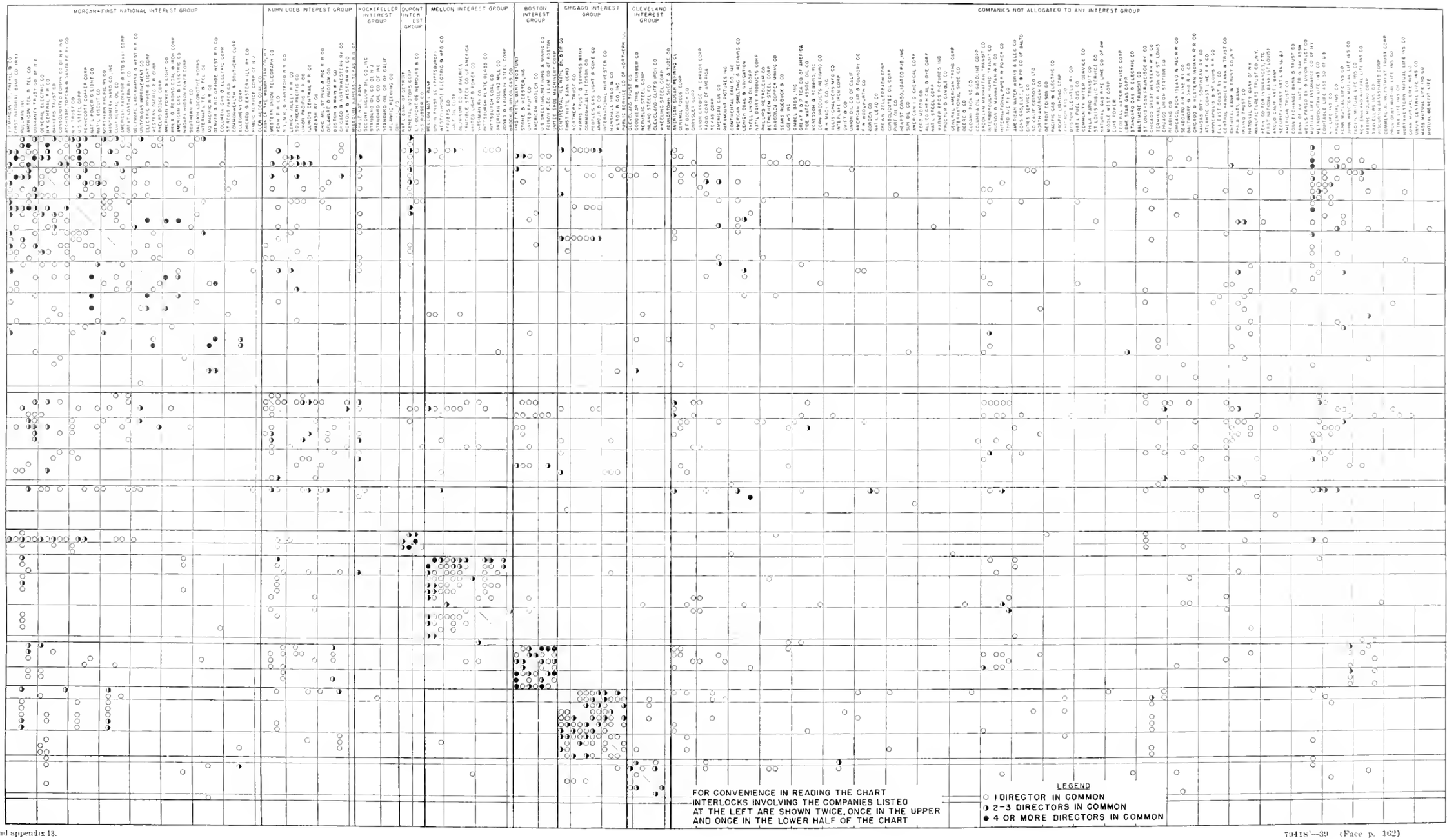
# INTERLOCKING DIRECTORATES AMONG 250 LARGE CORPORATIONS, 1935 ARRANGED ACCORDING TO INTEREST GROUPINGS




Source. See appendix 12 and appendix 13.

with the Boston group, but because 16.6 percent of its voting power was held by the Chase National Bank, it was not so classed. Other corporations are related to the eight interest groups in lesser degree. Likewise, some of the corporations not closely linked to the eight groups are linked to each other in varying degrees.

Finally, the eight interest groupings depicted above are by no means independent of each other. Thus, while there were two Morgan partners and four representatives of First National on the board of directors of Pullman, Incorporated, there were three representatives of the Mellon interests. Similarly, these two groups meet on the directorate of Texas Gulf Sulphur Co., which in 1936 accounted for two-thirds of the sulphur produced in the United States. Each of the interest groups comes in direct relation to each other group in connection with one or another of its activities.

It is apparent from the foregoing analysis that the corporate community, though not formally organized, does build up into significant and more or less interrelated interest groupings. It is clear that corporate policies must be influenced by these interest groupings, though just how far only extensive study can disclose. It is also well recognized that the choice of personnel of corporate management is to a significant extent influenced through these groupings. In the structure of controls, the controls exercised by this corporate community among the larger corporations are of major importance. The influence of these controls also extends beyond the larger corporations. Many of the individuals making up this corporate community also hold responsible positions in medium-sized and smaller corporations. The larger banks can exercise some influence over smaller banks through the system of banking correspondents and over smaller companies through the loan of funds. The larger corporations are often in a position to influence the managements of enterprises from which they purchase their raw material or to which they sell their products. The nonmarket controls exercised by the corporate community thus extend beyond the larger corporations. The main importance of the corporate community, however, lies in the controls exercised over the policies of the larger corporations, through them affecting the whole American economy.

### Formal Organizations Representing Economic Interests

In addition to the informal but none-the-less significant groupings of controls which center in the corporate community, there are certain economic-interest groupings operating through formal organizations, which have a significant impact on the policies adopted by specific producing units. The most important of the economic interests formally organized are those of business, labor, farmer, and consumer. In each of these fields of economic interest, there are national organizations which aim to protect the special economic interests of their members. Associated with these national organizations or independent of them are smaller economic-interest groupings organized on a regional or functional basis which aim to further the particular economic interest with which they are concerned. These organizations function partly through the collection and dissemination of information to their members, partly through measures aimed to influence public thinking, partly through their impact on the process of government policy formation, and partly through the development of common policies which their separate members are encouraged to adopt. The importance of these organizations in influencing directly or indirectly the policies of producing units varies so from organization to organization that no simple analysis can indicate the role they play in the structure of controls. The most that can be done is to indicate some of the more important organizations, the scope of their membership, and examples of the kind of controls they are in a position to exercise. This can most easily be done by taking up separately the organizations built around each of the four major economic interests.

### Organizations Based on Business Interests

The many organizations built on business interests do not fit into any simple pattern of activity. Some organizations, like the American Bankers Association, the Association of American Railroads, the Edison Electric Institute, the National Manufacturers Association, and the American Iron and Steel Institute, represent to a very considerable degree an extension of the corporate community, being made up of, or to a significant extent dominated by, the larger companies. Other organizations, like the National Retail Dry Goods Association and the Association of Retail Druggists, are made up for the most part of relatively small enterprises. Between these extremes lie many trade associations which are neither an integral part of the corporate community nor yet mainly outside it. Likewise, the functions performed by such associations vary in the widest degree.

In 1937 there were, in addition to the finance, railroad, and utility associations, over 2,400 national and interstate trade associations, each tying together, loosely or more closely, separate enterprises in particular industries. To these must be added the 4,100 State and local trade associations whose importance is primarily local, and the 5,400 local chambers of commerce.[22]

Not all of these associations have the same significance for the structure of controls. Those which are primarily loose organizations, largely fraternal and promotional in their activity, presumably have little influence on policies adopted with respect to the use of

[22] These are not all members of the U. S. Chamber of Commerce.

with the Boston group, but because 16.6 percent of its voting power was held by the Chase National Bank, it was not so classed. Other corporations are related to the eight interest groups in lesser degree. Likewise, some of the corporations not closely linked to the eight groups are linked to each other in varying degrees.

Finally, the eight interest groupings depicted above are by no means independent of each other. Thus, while there were two Morgan partners and four representatives of First National on the board of directors of Pullman, Incorporated, there were three representatives of the Mellon interests. Similarly, these two groups meet on the directorate of Texas Gulf Sulphur Co., which in 1936 accounted for two-thirds of the sulphur produced in the United States. Each of the interest groups comes in direct relation to each other group in connection with one or another of its activities.

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### Organizations Based on Business Interests

The many organizations built on business interests do not fit into any simple pattern of activity. Some organizations, like the American Bankers Association, the Association of American Railroads, the Edison Electric Institute, the National Manufacturers Association, and the American Iron and Steel Institute, represent to a very considerable degree an extension of the corporate community, being made up of, or to a significant extent dominated by, the larger companies. Other organizations, like the National Retail Dry Goods Association and the Association of Retail Druggists, are made up for the most part of relatively small enterprises. Between these extremes lie many trade associations which are neither an integral part of the corporate community nor yet mainly outside it. Likewise, the functions performed by such associations vary in the widest degree.

In 1937 there were, in addition to the finance, railroad, and utility associations, over 2,400 national and interstate trade associations, each tying together, loosely or more closely, separate enterprises in particular industries. To these must be added the 4,100 State and local trade associations whose importance is primarily local, and the 5,400 local chambers of commerce.[22]

Not all of these associations have the same significance for the structure of controls. Those which are primarily loose organizations, largely fraternal and promotional in their activity, presumably have little influence on policies adopted with respect to the use of

[22] These are not all members of the U. S. Chamber of Commerce.

resources. On the other hand, closely-knit associations which present a united front for an industry in dealing with labor, in disciplining recalcitrant members, in developing practices affecting prices and production, in influencing public thinking, and in affecting government policy may exercise a very considerable measure of influence over the policies developed in the use of resources. Some business associations concentrate on one particular type of activity, such as trade relationships or government policy, while others carry on a more diverse activity. The significance of particular business associations for the structure of controls thus varies from association to association. Similarly, the character of its membership affects the significance of a particular association. An association in an industry made up of a few large corporations may add little to the structure of controls, being simply an additional avenue through which the large corporations exercise their controls. On the other hand, in an industry in which the individual producers are weak, the combination brought about through the trade association may represent a very considerable increase in the nonmarket controls which are exercised within the industry. Only as the wide variety of roles played by business associations are recognized can their place in the structure of controls be clearly seen.

#### Major Business Associations

Probably the five most important business associations are the national associations in the fields of finance, railroads, utilities, manufacturing, and all business. The American Bankers Association has a membership which in 1938 accounted for over 90 percent of the banking assets of the country.[23] The Association of American Railroads represents within its membership practically the whole of the railway mileage of the country. The Edison Electric Institute covered through its membership approximately 90 percent of the country's electrical generating capacity. The National Association of Manufacturers included manufacturing enterprises employing roughly a third of the workers in manufacturing industries. The Chamber of Commerce of the United States has not specialized but brings into a single organization 1,000 local chambers of commerce, 500 trade and other business associations, and 10,000 separate corporations and individuals carrying on all types of activities.

With the possible exception of the United States Chamber of Commerce, these national associations appear to be more or less closely tied into the corporate community. Six of the 31 officers and directors of American Bankers Association are officers or directors of six of the country's 30 largest banks. The railroad and utility associations are almost entirely composed of the corporations listed among the 200 largest, and their directorates are for the most part made up of representatives of these large enterprises. The Chairman of the Board and six others of the 18 officers of the National Association of Manufacturers are responsible executives of the 106 largest industrial corporations, while 12 of the 70 directorates of the association were drawn from these largest corporations, and others of the largest corporations are represented on the association's more important policy committees.[24] Even in the case of the United States Chamber of Commerce, there is an important interlocking with the large corporations, 16 directors and officers out of 57 being associated with the management of 28 of the 250 larger corporations.

The important role which such organizations aim to play in the American economy is suggested in their published literature. In one of its bulletins, the National Association of Manufacturers states that it is "the medium through which American industry is able to voice a united opinion on vital national questions" and that it is "the only organization exclusively representing the interests of American industry."[25] The United States Chamber of Commerce indicates that its primary function is "to obtain the matured judgment of business upon national questions, and to present and interpret those views to the agencies of government and to the public."[26]

While the functions actually performed by these associations are varied and complex, there is a certain similarity in the character of their activities. Each of them acts as a center for the gathering of information and its dissemination to members. Each of them facilitates the development of common standards and policies within its particular sphere of productive activity. Each of them acts to develop agreement among its members with respect to governmental policies, and campaigns are carried on to prevent the adoption by government of policies believed to be harmful to their interests and to encourage the adoption of favorable policies. Finally, each of these business associations makes it a part of its program to try to influence public attitudes with respect to the activities and aims of its members and public policies likely to affect their interests.[27] All of these association activities are aimed to influence, directly or indirectly, the policies adopted in the use of resources and constitute a more or less significant part of the structure of controls.

[23] See *List of Members of the American Bankers Association*, Mar. 31, 1938.

[24] One hundred companies contributed approximately 45 percent of the total income of the National Association of Manufacturers in 1936. *Hearings before a Subcommittee of the Committee on Education and Labor, United States Senate*, 74th Congress, S. Res. 266, pt. 17 (Exhibit 3799).

[25] *Ibid* (Exhibit 3793).

[26] Pamphlet published by the Chamber of Commerce of the United States, *The Chamber of Commerce of the United States, Its Organizations, Functions and Services*, p. 4.

[27] S. Res. 266, *op. cit.*

#### Other Business Associations

In addition to the five major associations listed above, there are the numerous more specialized trade and business associations. These associations play varying roles in separate industries, some being concerned particularly with labor relations, while others emphasize trade or pricing problems, government policies, public attitudes, or lines of activity less significant for the structure of controls.

The activity of these associations in relation to labor has varied all the way from attack on labor organization to the active acceptance of collective bargaining with representatives of labor. The National Metal Trades Association, for example, has made a regular practice of furnishing its members with operatives for industrial espionage, guards for struck plants, and strikebreakers up to 70 percent of the total employees in a plant.[28] When this association undertakes to support one of its members in a strike situation, it assumes full control over the conduct of the strike, and any member who settles a strike on terms other than those laid down by the association is liable to suspension or expulsion from the association. An employer who enters a closed-shop agreement with the union is ineligible for membership in the association. The American Iron and Steel Institute, without going to the extreme of the Metal Trades Association, has, in the past, acted for the industry in opposing the organization of workers, as is evidenced by the full-page advertisements published by the Institute in 1936 in 375 leading American newspapers, stating the position of the steel industry in opposition to the organizing campaign of the Steel Workers Organizing Committee.[29] On the other hand, labor organization has come to be accepted as a normal part of the organization of many industries, and regional or national collective bargaining agreements are developed between the trade associations and labor unions, as in the case of clothing and coal. Whichever type of policy is adopted by a trade association, the controls it exercises are a part of the structure of the controls which influence economic policies.

In the field of price problems, the activities of trade associations are not clearly defined. The antitrust laws make direct price controls illegal except as specific types of price control, such as resale price maintenance, are specifically legalized. At the same time, many trade associations do carry on price reporting and similar services which have an effect on price behavior without directly controlling prices. In particular industries their activity undoubtedly facilitates price collusion among members of the industry or the maintenance of a system of price leadership. No attempt can be made here to appraise the significance of such controls. All that can be said is that they constitute an integral, though often minor, part of the structure of controls.

The activities of business associations in the fields of government policy and of public thinking are very much less direct in their effects on the use of resources but are, nevertheless, significant for the structure of controls. Government policies can affect to a greater or less degree, not only the operations of the national economy, but also the structure of controls itself, while public attitudes are basic to the maintenance or modification of any given structure. Both of these will be discussed after the other major economic-interest groups have been considered.

### Labor Organization

Paralleling the large corporations and business associations are the organizations of labor, which occupy an increasingly important place in the structure of controls. Labor organizations exercise a measure of direct control over the use of resources both via the market, as they affect the relative bargaining strength of the parties and thereby the characteristics of the bargain in the labor market, and also administratively, to the extent that conditions of industrial operation are laid down by labor organizations or arrived at jointly by the representatives of labor and the representatives of business. In addition, labor organizations, like business organizations, affect the use of resources indirectly through their influence on government policy and on public thinking. A relatively detailed analysis of their place in the national economy is given in appendix 14. For the present purpose it is sufficient to point to the scope of membership in labor organizations, to the scope and character of the two large national federations of labor unions, and to the character of the activities of the separate labor unions, whether members of the federations or independent of them.

#### Membership in Labor Unions

No completely reliable figures are available as to the membership in labor unions, but the figures of membership made public by the national federations and the more important independent unions together amounted to approximately 8,000,000 in 1938.[30] This is approximately 55 percent more membership than was reported

[28] This and the following information on the activities of the National Metal Trades Association is derived from testimony before the La Follette Committee, op cit., pt. 3, p. 809 ff.

[29] In spite of the position stated by the American Iron and Steel Institute the largest single member, the United States Steel Corporation, and certain other members, subsequently adopted a policy of cooperation with the steel workers union and entered into agreements with it, leaving the so-called "little steel" fighting collective bargaining.

[30] The approximate character of this figure arises primarily from the difficulty of defining membership. Should a person who is temporarily behind in the payment of dues be classed as a member of a labor union? Is the membership of locals correctly reflected in the dues paid by locals to their national organizations?

in 1920, the previous peak of union membership, and nearly two and a half times the membership reported in 1929.[31] Altogether, this reported membership in unions in 1938 represents approximately a quarter of the total employee population.

#### Major Labor Organizations

The great bulk of labor union membership is in unions which are affiliated with one or the other of the two major union federations, the American Federation of labor and the Congress of Industrial Organizations. The total reported membership in 1938 affiliated with these organizations and unaffiliated is given below:

| | |
|---|---|
| Membership of unions: | |
| Affiliated with the American Federation of Labor | [1] 3, 600, 000 |
| Affiliated with the Congress of Industrial Organizations | [1] 3, 800, 000 |
| Unaffiliated trade unions | [2] 750, 000 |
| Total | 8, 150, 000 |

[1] Official figures of the American Federation of Labor and the Congress of Industrial Organizations.

[2] Estimated from the 1937 figures given in appendix 14

These two major labor organizations are primarily concerned with the servicing and strengthening of their constituent unions in their collective bargaining activity, with the encouragement of governmental policies favorable to their interests and the defeat of government policies believed to be harmful to them, and with influencing public attitudes respecting the activities and aims of their members and public policies likely to affect their interests. All of these activities are aimed at influencing more or less directly the policies adopted in the use of resources and the two national federations constitute a significant part of the structure of controls.

#### Labor Unions

The separate labor unions affiliated with the two major labor organizations or independent of them have as their primary functions the influencing of industrial policies through collective bargaining. Their influence on industrial policy ranges all the way from participation in such industrial problems as the settlement of the grievances of individual workers, through collective bargaining as to the terms of employment, to participation with management in developing the broad policies of an industry. Some activities like the settlement of grievances, though important to the individual worker, are of only secondary importance to the structure of controls. But labor-union participation in determining wage rates and hours of work, and union participation in the development of other elements of industrial policy, are of prime importance to the structure of controls.

Some impression of labor-union participation in policy formation can be obtained by an examination of the trade agreements entered into between organized workers and managements. These agreements, which record the results of collective bargaining or negotiation between representatives of workers and of their employers, range from very brief and simple statements of wages, hours, and other conditions of work to highly developed and elaborate regulation of many details of industrial relationships. They range from local agreements between unions and individual employers or local associations of employers to national agreements which set standards for a whole industry and are negotiated by national collective bargaining machinery. The customary form of local building or printing trades agreements is representative of activities local in scope, while the national agreement in the men's clothing industry, first negotiated in 1937 between the Amalgamated Clothing and the National Trade Association, is an outstanding example of an agreement on a national scale, affecting 135,000 union members and covering virtually the entire industry.[32]

Agreements in the bituminous-coal industry cover broad districts, but not the entire market. However, the Appalachian agreement, negotiated by representatives of the United Mine Workers and the operators from some eight States, is customarily worked out prior to the agreements for other parts of the country, and this agreement sets standards which influence all other agreements in the industry. The type of agreement which is becoming of increasing importance is that which involves a labor union and a single great corporation, the agreement being negotiated between the leading officers of the union and executives of the corporation. Such agreement typically covers many plants, often in several States. In industries dominated by a few large corporations, the agreement with one company tends to set the pattern for others. This has happened in the past 3 years in the case of agreement between the United Automobile Workers and the General Motors Corporation which gave the pattern for union agreements with other automobile companies; that between the Steel Workers Organizing Committee and the Carnegie-Illinois Steel Corporation, a subsidiary of the United States Steel Corporation, followed by other steel agreements; the United Rubber Workers agreement with the Firestone Tire & Rubber Co. followed by similar agreements with other rubber companies; and that between the Sinclair Oil Corporation and the Oil Workers International Union. In such agreements, the more important subjects covered

[31] Based upon 1920 data in appendix 14 and upon unofficial estimate of the Bureau of Labor Statistics for 1929.

[32] *Monthly Labor Review*, July 1937, pp. 23–24.

usually include union recognition, physical conditions and working time, wages and labor supply, employment policies, and job protection. Since strikes, lockouts, or stoppages of any sort are usually outlawed during the life of the agreement, they customarily provide machinery for the enforcement of the agreement and the settlement of disputes during its life. In various degrees, such agreements reflect the participation of labor unions in the development of the industrial policies most immediately affecting labor.

In some industries, labor unions have gone beyond the immediate problems of wages, hours, and working conditions to participate in the development of broader elements of industrial policy. In the clothing industries, for example, both the Amalgamated Clothing Workers and the International Ladies' Garment Workers Union have long records of working with the employers for stabilization of competitive conditions and efficient operation. Under the agreements in the full-fashioned-hosiery industry, the union and the employers have attempted to deal with a difficult competitive situation arising from the introduction of new machinery in certain sections of the industry. In the bituminous coal industry, a joint Mechanized Mining Commission has been established for the study of problems arising from mechanization. These and similar activities reflect the interest of labor organizations in the broader phases of industrial policy.

In addition to their activity in connection with collective bargaining and the development of broader industrial policies, individual trade-unions, like the two federations of labor, parallel the activity of business associations by seeking through appeals to public opinion and through direct pressure on government to secure the adoption of policies which are in the interest of their members. Union representatives appear frequently at national and state legislative hearings on measures dealing with wages, hours, social security, relief, public works, labor relations, and other matters of economic importance to workers.

The participation of labor organizations in the development of industrial policy and their influence on public policy make such organizations an integral part of the structure of controls. A consideration of their full significance in American society lies outside the scope of this report. As the structure of the economy becomes increasingly a matter of organized relationships and administrative controls, labor organizations take their place as major structural elements in the economy.

### Farmer Organizations

Organizations of farmers constitute a third type of economic-interest grouping which is of importance to the structure of controls. Though less closely organized than either business or labor groupings, the many farm organizations, particularly the marketing and purchasing cooperatives, play a significant role in the field of agriculture and in reflecting the farm interest in the development of Government policy and in public discussion.

In terms of strictly economic activity, the most important farm organizations are the marketing and purchasing associations. In the marketing season of 1937–38 there were over 10,900 marketing or purchasing associations controlled by farmers with a combined membership of 3,400,000 and doing approximately $2,400,000,000 worth of business.

Some of the farm cooperatives, particularly milk cooperatives, play much the same collective bargaining role for farmers as is played for labor by its unions. Thus a milk cooperative may carry on negotiations with the big milk distributors as to the wholesale price of milk. Other cooperatives supervise the flow of farm products to market, as in the case of the larger fruit growers' cooperatives. For most basic farm products the cooperatives are not in a position to influence significantly price or the flow of products to market except as they reduce the purchasing or marketing margin. Other farm cooperatives purchase farm products as well as market them. Through these farmer-controlled associations, the farmers extend their influence into many activities closely related to farm production.

In addition to the farmer-controlled cooperative associations there are the National Grange, the Farmers Union, and the Farm Bureau. The membership of these organizations for 1938 is given below:

| | *Membership* [1] |
|---|---|
| National Grange | 800,000 |
| Farm Bureau | 400,000 |
| Farmers Union | 92,000 |

[1] Furnished by the offices of the respective organizations in Washington.

While these national farm organizations have little to do directly with the use of resources, their influence on governmental policy where it impinges on the interests of farmers is significant. Like business and labor organizations, these farm organizations, though less closely unified, constitute an important element in the structure of controls.

### Consumer Organizations

The fourth major economic-interest group, that of consumers, is relatively little organized. The leading national organization, the Cooperative League of the United States, is primarily a league of consumer-controlled producing enterprises affiliating 1,770 local cooperative enterprises in 1938 and with a total membership of 965,000.[33] Other specific consumer interests, such as health and education, are reflected in national

[33] A small number of these local cooperative enterprises are producers cooperatives rather than consumer cooperatives. Data furnished by the office of the League in Washington.

organizations, but there is no major national organization representing the consumer interest as a whole and apart from producing cooperatives.

### Government Units

Government units, Federal, State and local, provide the third set of nonmarket controls which, together with the market controls, constitute the essentials of the control structure. Because Government units are the primary organizations in the American economy through which the individuals and groups in the community are built into a social unity, they have powers and responsibilities which transcend those of any other type of organization, and the policies they adopt can vitally effect the use to which resources are put.

The controls which Government units can exercise arise primarily from organization, from the authority placed by society in the hands of government. To some extent they rest on the possession of the instruments of production, particularly public buildings and the public domain. Under certain circumstances they arise from the command over purchasing power. But in the main, the controls exercised by government rest on the complex social relationships which give government its special character.

#### Government Production

Certain of the controls exercised by government are directly concerned with Government production. The operation of the Post Office, the Army and Navy, the highway and educational systems, health and fire protection, all represent activities which in many ways parallel the productive activity of private enterprises but in which there are special advantages in Government operation. In certain areas the Government, through its productive activity, exercises controls beyond the boundaries of the particular administrative unit, influencing the market, as in the case of its handling of parcel post and in the operation of certain utility systems on a yardstick basis. But in the main, the productive activities carried on by Government units are aimed primarily at supplying specific products or services. Such activity differs in one important particular from business production, namely that of financing. Government units can charge the cost of production either directly to the individuals receiving the products or services as a business has to do, or it can spread the costs of production more widely through taxation. The latter is the procedure employed in the case of public education, fire protection, health protection, and many other services which benefit not only the immediate recipient but others as well and for which the community as a whole is taxed. In spite of this significant difference in financing, however, the controls exercised by Government units through their productive activity are essentially the same in nature as those exercised by other big administrative units. They involve administrative rather than market coordination within the administrative units and, to that extent, narrow the coordinating role of the market in much the same manner as the large corporate enterprise.

#### Canalizing Controls

The second major type of control exercised by government is through laws, rules, and regulations which canalize activity without administering it. The scope of this type of activity is difficult to measure and equally difficult to grasp. In 1935 there were 175,000 separate political jurisdictions [34] and, except perhaps in the case of school districts, the bulk of these exercised some controls of a canalizing character—police and fire regulations, building regulations, property protection, health protection, traffic regulation, and a host of other controls essential to the complicated activity of everyday living.

The basic importance of these types of controls to the structure of the national economy can be seen by examining a few of the more important. Fundamental to the conduct of present-day business activity are four sets of canalizing rules set up by government—the protection of property, the enforcement of contracts, the rules for bankruptcy and the laws which make possible the development of corporations and their exercise of legal powers. Without these canalizing controls exercised by government, modern business, as it is known today, would be impossible. Parallel to the protection of property is the protection of collective bargaining, each being essential to protect the basic interests of the suppliers of one of the factors of production.

In addition to the establishment of the basic rules of the game, Government units canalize specific lines of activity through the development of special regulations and regulatory bodies. The regulation of trade practices and the canalizing of industrial policies are partly the concern of State and local governments but have increasingly become a concern of the Federal Government, as business enterprises increasingly affect interstate commerce. This latter development is reflected in the creation of the Interstate Commerce Commission, the Federal Trade Commission, the Federal Communications Commission, the Federal Power Commission; the Securities and Exchange Commission, and other lesser regulatory commissions and agencies. It is not possible here to appraise the extent or effect of the canalizing and sometimes administrative controls exercised through these agencies, yet it is clear that they constitute a significant element in the structure of controls.

[34] See appendix 15.

In the field of business-labor relations, Government units have increasingly developed rules of conduct comparable to the already well-developed rules covering the relations between business units. Many State laws and the interpretations of the State courts have determined the rights of organized labor to engage in such activities as strikes, picketing, and certain types of boycotting to strengthen their bargaining position, just as the right of business to lock out its employees has long been recognized. Federal legislation and the Federal courts have further defined the activities permitted to employers and organized workers in specific respects. The importing of strikebreakers across State lines and the use of the yellow-dog contract by employers have been curbed, while the sit-down strike and secondary boycotts have similarly been outlawed. The National Labor Relations Act has brought the regulation of labor relations in industries operating in interstate commerce primarily within the sphere of the Federal Government. Under the terms of the act, the National Labor Relations Board is responsible for the protection of collective bargaining in the sphere of interstate trade and is building up a code governing business-labor relationships comparable to the code governing property relationship developed through the courts. It thereby provides a framework within which the balance of controls between employers and workers are being worked out. In areas subject to particular Federal intervention, namely the railroads and more recently the maritime industry, the Federal Government has gone farther in providing, through the National Mediation Board and the Maritime Labor Board, the specific machinery for settlement of business-labor disputes.

These various types of facilitating and regulatory activities involve the relation of local, State, and Federal Governments to all or most types of industries. As has been noted, they are not administrative in character but rather provide the framework of rules within which the activities of individuals are carried on.

#### Industrial Policies

A third type of control exercised by government units arises when a government agency directly participates in the development of industrial policies. This is the type of control exercised in the railroad and public utility fields in which rates are developed through the interaction of regulatory commissions, the utility enterprises, and the courts; in the shipping industry where government subsidies are given to induce an expansion in the American Merchant Marine; and in the field of agriculture in which subsidies are given to build up the soil and to limit the production of soil-depleting crops. How far public utility regulation and other controls over industrial policy on the part of government have been successful in facilitating the effective use of resources it is not the function of this report to consider. But it is clear that they constitute a significant element in the structure of controls.

#### Fiscal Policies

The fourth main type of controls exercised by government which is significant to the national economy is that exercised through its fiscal policies. In this field it is primarily the fiscal policies of the Federal Government which are important. The Federal Government's responsibility for the money medium, its power to establish tariffs, and its great taxing, borrowing, and spending powers all place it in an outstanding position to influence the money flows which stimulate or dampen economic activity. Through its fiscal policies the Federal Government can, to a significant extent, convert current savings by one part of the community into current expenditures by another part, shift buying power from one group to another, and direct savings into capital formation. Whatever fiscal policies it adopts, the fiscal activity of the Federal Government is so important in relation to the whole economy that it must significantly affect its functioning.

### The Relation Between Government Units and Other Elements in the Control Structure

In outlining the major controls exercised by Government units, the latter have been treated as if they were relatively independent units. But it has already been pointed out that many of the controls exercised by the organized interest groups operate through government. Similarly, some of the controls exercised by the corporate community operate through government. As a result, the policies adopted by Government units and the controls they exercise reflect to a considerable degree the balance of controls in the whole community. Government thus represents more than any other single organization, the meeting ground of both the common and the conflicting interests of different economic groups and individuals and constitutes the major focus of the structure of controls.

### Conclusion

The preceding chapters on the organizational structure and the price structure disclosed the large extent to which the use of resources is not controlled by the market. In this chapter an attempt has been made to sketch the structure of the nonmarket controls which significantly affect the use of resources. The three main elements in this control structure have been outlined—the corporate community with its many ramifications and its climate of opinion; the major organizations representing the economic interests of business, labor, farmer, and consumer; and, finally, the Govern-

ment units through which the conflicting interests of different economic groups are developed into a more or less effective working compromise. These three sets of nonmarket controls combined with the market controls already discussed appear to constitute the main essentials of the control structure.

In this outline of the structure of controls, the focus has been on the character and locus of the major nonmarket controls, just as, in the chapter on the structure of prices, primary emphasis was given to the character and locus of market controls. No attempt has been made to show how the nonmarket controls actually affect the policies adopted in the use of resources or how they interoperate with the market controls. The operating effect on the use of resources of the combined market and nonmarket controls is a subject requiring intensive analysis but lying beyond the scope of this report on the structure of the American economy.

# CHAPTER X.—CONCLUSION

The American people are faced with a basic national problem in the extensive idleness of men and machines. Resources of manpower and materials and skills are available to establish a much higher level of living than now exists. The serious failure to use these resources to the full is placing our democratic institutions in jeopardy. The maintenance of democracy requires that an adequate solution be found to the problem of keeping resources fully employed. The question must arise as to what national policies appropriate to a democracy can be developed which will insure reasonably full use of national resources, employment opportunities for all workers at reasonable wages, opportunities for the investment of savings with reasonable expectations of profits or a safe return, opportunities for the exercise of the organizing and managing abilities developed in modern industry, outlets for the exercise of initiative in ways which will be of advantage both to the individual and to the community.

This is a problem so broad in its scope and so basic in its character that no simple solution is likely to be found nor can a solution be found in a day or a year. If a democratic solution is to be worked out it will be the product of many minds working through a period of years. It will require an increased understanding of the problem on the part of the leaders of business, labor leaders, farm leaders, political leaders, and other leaders of public thinking. It will require continuing analysis by the technicians of different phases of the problem and a more detailed delineation of the characteristics of the national economy. It will require the careful elaboration and discussion of alternative lines of policy in order that gradually a workable solution can be developed and be gradually put into practice.

As a single small step toward the development of such a solution, an effort has been made in this report to sketch in the main structural characteristics of the American economy. This is done with the idea that such a sketch could throw light on the character of this basic national problem and might disclose the direction in which possible solutions might lie. If the report serves to clarify the problem and help provide a more effective frame of reference for the development of national policies, it will have accomplished its full purpose.

The report attempts to bring all the salient structural features of the national economy into focus in the short compass of a few hundred pages. Such a condensed summary of the economic structure necessarily lacks in detail and has to omit many things which are in themselves important yet of secondary importance to the national economy as a whole. Some essential elements of the structure are not blocked in because of the lack of data or because of the mischances of research organization. As in the case of a report on any subject, the determination of the elements to be treated as essential rests with the individuals responsible for the report and is the result of their judgment. Whatever gaps or distortions occur in this report should be eliminated through discussions and further research. A reasonable measure of general agreement as to the structural characteristics of the American economy would appear to be an essential step toward a satisfactory solution of this basic problem.

In this concluding chapter there is no advantage to be gained in summarizing the content of the foregoing chapters. Each chapter is in itself such a condensed summary of the field covered that farther summary is useless. The structure stands as presented in the preceding eight chapters, each sketching in one aspect of the whole economy. It must be left to the reader to combine these separate aspects in his own mind into a unified conception of the national economy as a whole.

# APPENDIX 1.—A CONSIDERATION OF THE VALIDITY OF THE BUREAU OF LABOR STATISTICS PRICE INDEXES[1]

## Introduction

### The Problem

The present discussion is devoted to an effort to appraise the usefulness of the Bureau of Labor Statistics indexes of wholesale prices for studies of the degree of rigidity and the amplitude of movement of the prices of the commodities to which they relate.

The validity of these indexes as tools for such an analysis has been seriously questioned. It has been pointed out that, in many markets, price changes take forms which price indexes fail to reflect. Thus, Willard L. Thorp, at a meeting of the American Economic Association in December 1935,[2] contended that price indexes could not portray important price modifications achieved through changes in collateral terms of sale, through the granting of special treatment to favored groups of customers, or through changes in the quality of the product.

In view of the fact that the Bureau of Labor Statistics wholesale price indexes have been used as a basis for analysis in this report, it is essential that these criticisms of the indexes be examined and some indication of the reliability of the Bureau of Labor Statistics series be obtained.

### Nature of the Bureau of Labor Statistics Indexes

The validity of such criticism is largely dependent upon the precise nature of the Bureau of Labor Statistics indexes, and the manner in which they are compiled. The 784 individual price series which comprise the Bureau of Labor Statistics weighted price index cover an exceedingly wide range. They include figures for raw materials, for semimanufactured goods and for highly processed commodities; for standardized products and for highly specialized, trade-marked articles. Some prices in the series represent open market prices, uniform for all sellers and to all purchasers. Others are for commodities whose prices vary widely for different groups of buyers, with each sale a virtually independent transaction. For a few of the products included in the Bureau of Labor Statistics series, there are almost as many prices in actual effect at any given time as there are purchasers in the market.

In its efforts to secure price statistics adequately representative of the breadth of American industry, the Bureau of Labor Statistics has had recourse to two major sources of information. Three hundred and eighty-three, or slightly less than one-half of the total number of indexes included in the weighted average, are obtained directly from manufacturers or sales agents, usually in the form of weekly price reports. These reports quote the nominal or list price, and also specify the major terms of sale, such as trade and cash discounts.

For 367 commodities, or the bulk of the remainder, price quotations are taken directly from standard trade journals. Of the remaining 34 items, 31 are reported by boards of trade, trade associations and the like, and 3 are compiled from reports by Federal or State bureaus.

The distribution by source of principal commodity groups is revealed in table 1

TABLE 1.—*Source of wholesale price quotations, February 1937*[1]

| Source | Farm products | Foods | Hides and leather products | Textile products | Fuel and lighting | Metals and metal products | Building materials | Chemicals and drugs | House furnishing goods | Miscellaneous | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Standard trade journals | 56 | 81 | 12 | 23 | 15 | 55 | 28 | 80 | | 17 | 367 |
| Manufacturers or sales agents | 6 | 36 | 29 | 81 | 9 | 74 | 49 | 3 | 61 | 35 | 383 |
| Boards of trade, associations, etc | 3 | 5 | | 8 | | | 9 | 6 | | | 31 |
| Federal or State bureaus | 2 | | | | | 1 | | | | | 3 |
| Total | 67 | 122 | 41 | 112 | 24 | 130 | 86 | 89 | 61 | 52 | 784 |

[1] Wholesale prices, February 1937, Bureau of Labor Statistics, p. 12.

The wide variety of products included in the series virtually precludes the possibility of maintaining uniformity in the character of the indexes, even for those based upon direct reports. In general, the Bureau attempts to present, as nearly as possible, plant net prices for the usual trade sale. The price is, therefore, on an f. o. b. plant basis, with trade and cash discounts deducted. No effort is made to allow for special class discounts to favored groups of buyers, or for quantity discounts on very large purchases.

In the case of prices taken from trade papers, it is often impossible to meet these general requirements. In a large number of instances the quotations are on a delivered basis. In others, the terms of sale are omitted or inadequately stated. Consequently, it is impossible to maintain strict comparability between prices taken from trade journals and those obtained on the basis of direct reports.

The commodity to which each series applies is usually defined as precisely as possible, in order to preserve

[1] Appendix 1 was prepared by Saul Nelson.

[2] The American Economic Review, vol. 26, No. 1, supplement, March 1936, *Price Theories and Economic Realities*, by Willard L. Thorp, pp. 15–22.

price comparability through time. For nonstandard merchandise, such as clothing or machinery, it is often extremely difficult to devise such a definition. For price series taken from trade journals, the description of the commodity given in the source must necessarily be accepted by the Bureau, even though it may lack the degree of precision considered desirable.

#### Factors Affecting Reliability of the Bureau of Labor Statistics Indexes

The reliability of the indexes is directly conditioned by the frequency with which price changes take forms which the indexes fail to reflect, and by the extent to which such indirect changes modify the nominal, reported price.

In the vast majority of business transactions price is but one of the many elements of the sales bargain. The nominal price may be modified by any of a wide variety of discounts, allowances, or extras. Moreover, what the purchaser receives is not merely a physical commodity, but is that commodity subject to any understandings or agreements such as guarantees, services, and the like, which the seller may grant to his customer. Any change in any of these elements affects the net price—the true values exchanged—no less immediately than does a change in the nominal price level.

The most important of these indirect price variants are:

1. *Changes in the collateral terms of sale.*—Modifications in cash or trade discounts, changes in credit terms, price or quality guarantees, services performed by the seller for the buyer, freight, and advertising allowances and the like all affect the true price of a commodity no less immediately than changes in the nominal or list price.

2. *Special treatment of favored customers or groups of customers.*—Important changes in price may affect only a selected segment of the market. Special quantity discounts may be granted to very large purchasers, or the distinction may be made on the basis of function rather than of size. In some industries, the bulk of the product may be sold on the basis of long-term contracts, with the reported price quotation affecting only a small fraction of the total sales.

3. *Secret rebates and concessions.*—The allowance of secret rebates and concessions may render the reported prices and published terms of sale virtually meaningless, especially during the prevalence of a buyers' market.

4. *Geographic price variations.*—The Bureau of Labor Statistics indexes portray price variations at some specific point usually the plant or some principal market. For some commodities, notably those in the food group, prices at more than one market are reported. Localized price reports may not, however, adequately reflect price trends throughout the nation.

5. *Changes in the product.*—The impossibility of adequately describing complex commodities renders it extremely difficult to express changes in design or in quality in terms of price.

#### Scope of the Investigation

Two distinct techniques of investigation were pursued in an effort to appraise the extent and importance of these indirect forms of price modification.

1. The detailed price structure of certain industries was studied. National Recovery Administration files and reports, reports and investigations of the Federal Trade Commission, and the congressional investigation of the American Retail Federation constituted the principal sources of information for this approach.

2. Bureau of Labor Statistics price series for a wide selection of commodities were compared with prices derived from data published by the Bureau of Census and the Bureau of Mines. In general, Census and Mines data closely reflect actual net returns to the producer after the deduction of all direct and indirect concessions. Consequently a comparison of this sort afforded a fairly reliable measure of the ability of the Bureau of Labor Statistics indexes to measure on an annual basis the extent of changes in net price over a period of years.

### Changes in Collateral Terms of Sale

The importance of changes in collateral terms of sale was clearly recognized during the National Recovery Administration period. Industries whose codes included some form of minimum price provisions, or which established open price systems, found it necessary to guard against evasion of such provisions by exercising minute supervision over collateral terms of sale. The number of such restrictions ran well into the hundreds.

In interpreting Bureau of Labor Statistics price statistics, therefore, it is necessary to consider the possibility of important changes in price being effected through changes in terms of sale. The Bureau itself makes every effort to secure information as to the most important terms, but it would be a physical impossibility for it to analyze the price structure for each commodity included in the weighted index in complete detail.

Some of the more important terms of sale include the following:

1. *Discounts and allowances*—
   (a) Cash discount.
   (b) Trade discount.
   (c) Quantity discount.
   (d) Freight allowance.
   (e) Advertising allowance.

(f) Promotional allowance.
(g) Extras, small quantities or unusual size.
(h) Trade-in allowance.
2. *Services and guarantees*—
(a) Price guarantees.
(b) Quality guarantees.
(c) Sales assistance.
3. *Other terms*—
(a) Credit terms.

The importance of each of these elements varies considerably from industry to industry. In the sale of automobiles and radios, for example, the nominal price may be greatly modified by the granting of a generous allowance on a used car or radio set. Extravagant quality guarantees were at one time a favorite method of cutting prices on automobile tires without any change in the nominal list. Similarly, in the coal industry, certain producers endeavored to evade code price restrictions by issuing guarantees of heat content which they knew were impossible of fulfillment.

The extent to which changes in terms affect the list price may be illustrated by examining a specific industry. The National Recovery Administration files contain an excellent record of the price quotations of fertilizer producers during the code period. These can be compared with the Bureau of Labor Statistics quotations for the same product.

Under the fertilizer code, all producers were required to file a complete list of their prices and terms for all grades of fertilizer. Mixed fertilizer is commonly sold on a delivered "to the farm" basis. The price quoted is uniform for a defined geographic area and freight charges are absorbed by the producer.

The price structure of the fertilizer industry is somewhat complex—though not more so than that for many other industries. The quoted list price during the code period was subject to a number of collateral terms, of which the most important were the following:

1. *Cash discounts and credit terms.*—Large discounts from the list price, ranging as high as 15 percent were allowed for fertilizer purchased on or before certain dates. Thus, one company allowed a discount of 15 percent for fertilizer purchased and paid for before March 15, 14 percent for payment before April 15, 13 percent for payment by May 15, and 12 percent for payment by June 15. In addition, a further discount of 1 percent for cash was allowed. If payment was made prior to March 1 the seller paid interest at the rate of 8 percent. For payment after July 1 the purchaser was required to pay interest at the rate of 7 percent.

2. *Trade discounts.*—Most fertilizer was distributed through agents during the code period. On cash sales these agents received a discount of 5 percent, while on credit sales, when the agent guaranteed payment of the note, he received an additional 5 percent.

3. *Quantity discounts.* Agents received additional discounts ranging from 1 to 3 percent if they handled over 500 tons during the season. (As in the case of a few other industries, it did not matter whether the agent secured all the 500 tons from one producer or handled an aggregate of 500 tons from a number of producers. The same discount was allowed in either case.) On direct sales, consumers received quantity discounts of 3 to 5 percent.

4. *Packaging allowances and extras.*—If instead of specifying that fertilizer be packed in 200-pound burlap bags, the buyer was willing to accept delivery in bulk, he was granted a discount of from $1 to $1.50. If, on the other hand, he specified smaller bags, or preferred cotton bags to burlap bags, the price was increased from 50 cents to $2 per ton.

5. *Transportation allowances.*—If delivery was accepted at the plant, or at a railway station, instead of at the farm, varying allowances were granted, depending on the distance trucked. If, on the other hand, the quantity purchased was less than a carload, an added charge was made.

6. *Price guarantees.*—In addition to these quoted terms, it has at times been the practice in the fertilizer industry to guarantee prices against decline during the selling season. In other words, a farmer who ordered fertilizer in March would be assured the benefit of any cut in prices announced prior to, say, July. The guarantee might also insure to the buyer as low a price as that charged by any competing producer. Apparently these guarantees usually consisted of informal understandings between the agent and the purchaser.

It would be completely impracticable for the Bureau of Labor Statistics to express each one of these terms of sale in its price quotations. Instead, it reports prices for a single set of conditions. In the case of fertilizer, the price quoted is that which an agent is required to pay on cash sales. This represents a net cash price on carload lots of 200-pound bags. Average freight from the plant to the farm is deducted, thus making the price an f. o. b. plant price rather than a delivered price.

Table II compares the price quotation of a leading producer[3] with the Bureau of Labor Statistics price quotations during the code period. The grade of fertilizer in each case is the same. The price is for 3 8 3 fertilizer, which contains 8 parts of phosphorus and 3 each of potash and nitrogen to each 100 pounds of mix. The Bureau of Labor Statistics price is for the South Atlantic region as a whole, while the National Recovery Administration price is for South Carolina only.

[3] This producer was an acknowledged "price leader" in this territory. The prices and terms of most competing producers followed his with few and minor variations.

TABLE II.—*Price per ton of mixed fertilizer (3–8–3 mix): comparison of National Recovery Administration and Bureau of Labor Statistics data*

[N. R. A. data—South Carolina; B. L. S. data—South Atlantic States]

| | Bureau of Labor Statistics[1] | List price 200-pound bags | Agents' cash price 200-pound bags | Agents' time price 200-pound bags | List price 100-pound bags | List price white cotton bags | List price in bulk | Agents' price for 1,000 tons |
|---|---|---|---|---|---|---|---|---|
| *1933* | | | | | | | | |
| December | 16.75 | 26.25 | 22.05 | 23.62 | 27.25 | ..... | ..... | ..... |
| *1934* | | | | | | | | |
| January | 17.38 | 25.85 | 20.42 | 23.27 | 26.60 | 27.10 | 24.85 | ..... |
| February | 17.38 | 25.85 | 20.42 | 23.27 | 26.60 | 27.10 | 24.85 | ..... |
| March | 17.25 | 25.85 | 20.42 | 23.27 | 26.60 | 27.10 | 24.85 | 20.01 |
| April | 17.25 | 25.85 | 20.68 | 23.27 | 26.60 | 27.10 | 24.85 | 20.27 |
| May | 17.25 | 25.85 | 20.94 | 23.27 | 26.60 | 27.10 | 24.85 | 20.52 |
| June | 17.25 | 25.85 | 21.20 | 23.27 | 26.60 | 27.10 | 24.85 | 20.78 |
| July | 17.25 | 24.95 | 19.71 | 22.45 | 25.70 | 26.20 | 23.45 | 19.32 |
| August | 17.25 | 24.95 | 19.71 | 22.45 | 25.70 | 26.20 | 23.45 | 19.32 |
| September | 17.25 | 24.95 | 19.71 | 21.96 | 25.70 | 26.45 | 23.45 | 19.32 |
| October | 17.25 | 24.95 | 20.36 | 21.96 | 25.70 | 26.45 | 23.45 | 19.94 |
| November | 17.25 | 26.70 | 21.63 | 23.50 | 27.45 | 28.45 | 25.70 | 20.98 |
| December | 18.15 | 26.70 | 21.63 | 23.50 | 27.45 | 28.45 | 25.70 | 20.98 |
| *1935* | | | | | | | | |
| January | 18.15 | 26.70 | 21.63 | 23.50 | 27.45 | 28.45 | 25.70 | 20.98 |
| February | 18.15 | 26.70 | 21.63 | 23.50 | 27.45 | 28.45 | 25.70 | 20.98 |
| March | 18.15 | 26.70 | 21.63 | 23.50 | 27.45 | 28.45 | 25.70 | 20.98 |
| April | 18.15 | 26.70 | 21.90 | 23.50 | 27.45 | 28.45 | 25.70 | 21.24 |

[1] Represents net cash sales in carload lots of 200-pound bags as of 15th of month.

In comparing Bureau of Labor Statistics with code prices it is necessary to remember that the former does not include freight. However, since the average freight charges during the period were uniform, price trends should be parallel. An examination of the table shows that the Bureau of Labor Statistics price represents only an approximation to the actual price behavior. This price also fails to reflect the increase of 2 percent in agents' discount which occurred in September 1934. Moreover, there is nothing in the Bureau of Labor Statistics data corresponding to the month-to-month variations occasioned by the changes in discounts which automatically occur as the various preseason discount dates are passed.

It is important to emphasize that the Bureau of Labor Statistics data relate to a specific type of transaction only. They cannot possibly express any changes in the proportion of cash to credit sales; in the ratio between direct sales to the consumer and sales through agents; in the relative frequency with which buyers qualify for quantity discounts or the like.

Considering the general trend of prices during the period as a whole, however, a close relationship is evidenced. The difference between Bureau of Labor Statistics and cash prices, representing primarily freight charges, was similar and close to the actual freight charge both at the beginning and at the end of the code period. In this case, therefore, the failure of the Bureau of Labor Statistics price data to reflect changes in collateral terms of sale accurately may not be of major importance. In the absence of adequate similar data for other industries, it is impossible to determine the extent to which this case is representative. However, an effort will be made below to present a quantitative appraisal of the extent to which changes in collateral terms of sale, combined with all other forms of indirect price modification, affect the validity of Bureau of Labor Statistics price statistics.

## Special Treatment of Favored Customers or Groups of Customers

Discrimination in price between customers may range from small quantity discounts to enormous price reductions. In the case of mixed fertilizer, the maximum quantity discount was only 5 percent. In other industries, however, the price to certain customers may be less than half of that to others.[4]

Where very wide differences exist in the treatment accorded to different customers, any price quotation is necessarily of limited meaning. The price structure for bakers' yeast is an excellent example. The price for this product is not rigid in the strict sense, since frequent minor variations occur from month to month. In terms of net change, however, the reported price fluctuates within a very narrow range. The average price during 1929 was 24¢ per pound delivered, during 1932 the price was 24.7¢, and during 1936, 22.5¢.[5]

In actual practice, the Bureau of Labor Statistics price quotation relates only to a small fraction of the total market. The Standard Brands Corporation is currently charging prices to different customers ranging all the way from 14 to 25 cents, depending on the quantity purchased. Independent producers are charging as low as 8 cents, or less than one-third of the maximum and slightly more than one-third of the Bureau of Labor Statistics quotation.[6]

Yeast is far from unique in showing such wide variations between its minimum and maximum price. During the National Recovery Administration period the list price of flashlight cells for a certain company was 10 cents. The price actually paid by toy manufacturers using very large quantities was only 2.5 cents. Wholesale jobbers paid 5 cents and retail dealers 6.5 cents at the same time. Moreover, the price of a certain battery sold to a chain store was 5.5 cents when carrying the manufacturer's label, and only 2.75 cents when carrying a private label.[7]

Although the Bureau of Labor Statistics does not carry a series for flashlight batteries, it does quote

[4] The following discussion relates to conditions existing prior to the passage of the Robinson-Patman Act. This act was designed to reduce price spreads between different customers.

[5] The yeast series is not included in the weighted average of the Bureau of Labor Statistics. The omission is purely on account of the minor importance of this product and does not reflect any judgment as to the relative reliability of the data.

[6] Federal Trade Commission in the matter of Standard Brands, Inc., and Standard Brands of California, Docket 2986.

[7] The American Economic Review, Vol. 26, No. 1, supplement March 1936, *Price Theories and Economic Realities*, by Willard L. Thorp, pp. 16–17.

prices for radio B cells whose price structure is closely similar.[7] In this case, again, the complexity of the market structure seriously detracts from the usefulness of the Bureau of Labor Statistics price quotations.

Much of the apparent rigidity of the price indexes for heavy chemicals, such as sulphuric acid, is due to the fact that the price quotation applies only to a small segment of the market. The list price is the price which the small buyer pays. The price to the large customer is set by individual bargaining. The Aluminum Co. of America appears to pursue a very similar policy. This company refuses to quote a nominal price and deals with each customer on an individual basis.

The bearing of these price discriminations between customers upon the present discussion is twofold. In the first place, where the range of prices to different buyers is very wide, the Bureau of Labor Statistics quotation may apply to only a very small segment of the market. In addition, important changes in price may take the form of changes in the relationship of the prices quoted to different classes of customers, or of changes in the proportion of customers in each class.

## Secret Rebates and Concessions

The reliability of any form of price quotation as a guide to actual price movements is, of course, largely conditioned by the faithfulness with which these quotations are actually observed in the course of business. In the case of some commodities, especially those sold on open markets, prices correspond exactly or closely with price quotations. In many lines of business, however, this is far less true. The nominal quotation may be very widely modified by large secret rebates or concessions granted either to a few powerful buyers, or even to the trade as a whole.

### Secret Concessions to Selected Customers

It is impossible to draw any rigid line between secret concessions to favored customers and the sort of special treatment which was discussed in the preceding section. It is generally true that where very large discounts are granted to certain buyers and denied to others, such action is not widely advertised by the seller. For example, the reduced prices at which large users of sulphuric acid are able to buy are not generally publicized.

Some distinction, however, may be drawn between regularly scheduled class discounts and secret concessions. For example, the Standard Brands Co., as previously stated, maintains a regular list of quantity discounts applying to bakers' yeast. This list, however, is not rigidly adhered to. An investigation conducted by the Federal Trade Commission, reveals the frequency with which special concessions are granted. According to the testimony of officials of the company, only about 40 percent of sales conform to schedule prices. In dealing with any customer, a branch manager is free to reduce list prices, which range up to 25 cents, to as low as 16 cents in order to retain his business. Further reductions to as low as 14 cents may be granted by the central office of the company.[9]

Secret concessions to mail-order houses and other large buyers are common in many industries. In the case of rubber tires, for example, it was recently shown by the Federal Trade Commission that the Goodyear Co. sold to Sears-Roebuck on the basis of a special cost-plus contract at prices far below the nominal wholesale level reported by the Bureau of Labor Statistics.

Large special discounts—some open, others strictly secret—were very common in the sale of processed foods prior to the passage of the Robinson-Patman Act. A congressional investigation of the American Retail Federation revealed the extent of these concessions to chain stores and other very large buyers. Sometimes these price reductions were in the form of ordinary quantity discounts. At other times, they took the form of advertising or promotional allowances. In either case they amounted to very substantial modifications of the list price.[10]

In certain lines of trade, concessions take forms which it is virtually impossible to measure quantitatively. In the sale of steel products to the railroads, for example, price reductions may take the form of freight diversion. Merchandise may be specially routed so as to allow the railroad buyer considerably higher freight revenue than strictly necessary. Purchases of scrap steel from railroads afford an additional avenue for indirect concessions.

### General Concessions to the Trade at Large

Frequently, wide price reductions to all customers are made without any change in the nominal quotation. This may happen for a variety of reasons. For example, an individual concern wishing to reduce prices in order to secure more business may fail to reduce its nominal list price for fear that its competitors will immediately meet, or even better its offer. However, it is almost impossible to prevent knowledge of such price cutting from spreading. As a result, its competitors usually soon offer similar concessions. In a buyers' market particularly—such as existed during the depression—the actual prices for many commodities

[7] National Recovery Administration Division of Review, *A Study of Open Price Filing in the Electrical Manufacturing Industry*, by Willard L. Thorp and A. H. Cæser, Vol. I, pp. 495 to 574.

[9] Federal Trade Commission in matter of Standard Brands, Inc., and Standard Brands of California. Docket No. 2986.

[10] The Special Committee on the Investigation of the American Retail Federation, House of Representatives, 74th Cong., 1st sess. See for example, vol. 4, pp. 207 to 243.

may drop sharply while the nominal quotations are kept at a high level. Undeclared price wars of this character may be considered as analogous, in the economic field, to the undeclared wars which have recently become so popular in international affairs. Their advantages are not dissimilar; they both retain the forms of tranquility and thus facilitate a return to normal practices as soon as conditions permit. It is naturally simpler and easier to withdraw or reduce special concessions than to raise a list price.

The following examples may serve to illustrate the use of this technique:

1. *The fertilizer industry.*—Some clue to the extent to which rebates and concessions affect nominal fertilizer prices may be obtained from a report of the Federal Trade Commission.[11] According to this report, there was widespread selling of fertilizer at prices far below list during the years 1921 and 1922. The Bureau of Labor Statistics index showed no change in price between January and December 1921. It showed a substantial cut between December 1921 and January 1922, and perfectly stable price quotations through 1922. According to the Trade Commission, however: "In 1921 and 1922 price lists were published as usual, but were so high that the companies were unable to maintain such prices for any length of time." The Commission reproduced many letters taken from files of fertilizer manufacturers which reveal the extent to which rebating was practiced. During this period, for example, Swift & Co. were selling to dealers at discounts of 33.3 percent plus 5 percent off schedule, and, in addition, granting a direct rebate of $2 per ton. The American Chemical Co. instructed its North Carolina sales managers to go as far as 33.3 percent below list wherever necessary to meet competition. On April 10, 1922, at a time when the Bureau of Labor Statistics index was perfectly stable, a district manager of the American Agricultural Chemical Co. wrote to its vice president: "I think every concern operating out of Atlanta, with no exception, is making almost any price it sees fit in order to get some business * * *. All managers and division managers practically admit that there is no regular price."

Although similar documentary evidence is not available for periods subsequent to 1921 and 1922, persons close to the trade state that similar practices have recurred under similar conditions.

(2) *Salt industry.*—A parallel situation occurred in the salt industry during the latter part of 1935. Table III shows the course of nominal prices for table salt as reported by the Bureau of Labor Statistics. These price quotations show no decline from March to September 1935. Yet, according to a National Recovery Administration study, a price war started early in 1935 and discounts of as much as 30 percent were being granted by August 1935. According to this report:

> Particularly during time of depression, in efforts to bolster declining sales volume, many members of the industry offered secret prices, discounts, rebates, and other concessions * * *.
>
> * * * * *
>
> In the latter months of the code period, the practice of granting secret rebates and other secret concessions from filed prices began to develop in the industry. Filed prices were maintained at uniform levels within the various marketing areas, but actual price uniformity was disappearing. The difficulty of discovering and proving secret price concessions, plus rather apathetic support from the National Recovery Administration along compliance lines, contributed to the growth of secret pricing.
>
> * * * * *
>
> Following May 27, 1935, deviations from published prices became more and more troublesome. By August the secret prices evidently became sufficiently serious to warrant retaliation by the price leaders in the industry. Since that time, there has developed one of the worst price wars experienced in recent years by this industry. Published prices remain practically the same as they were during the code period, but discounts and rebates ranging from 20 to 30 percent are being granted to various types of buyers.[12]

Despite the existence of this price war, the nominal price quotations as reported by the Bureau of Labor Statistics showed no change at all until October 1935. The October quotations were 26 cents, or 10 percent, below the September prices; but even this reduction in the list price did not approximate the extent of the discounts which were being granted.

Evidence relating to practices of this character could doubtless be multiplied. Secret rebates and discounts may well constitute the most important single source of error detracting from the accuracy of the Bureau of Labor Statistics price data.

In industries whose National Recovery Administration codes contained direct or indirect provisions for price control, the problem of departures from list prices during 1933–35 may have been accentuated. On the one hand, code provisions tended to increase rigidity and the official character of code prices provided a basis for their enforcement. On the other hand, to the extent that a code attempted to maintain prices out of line with those which would have existed in the absence of the code, the incentive to give secret rebates or otherwise to avoid holding to the list price was enhanced. The net effect cannot be assumed to have been greater departure from list prices or greater adherence to them. In specific industries, prices for the National Recovery Administration years must be used with caution, and the evidence of National Recovery Administration studies recognized as applying to the special conditions of these years.

[11] Fertilizer Industry. Letter from the Acting Chairman of the Federal Trade Commission transmitting in response to a Senate Resolution of June 17, 1922, a report on certain phases of the fertilizer industry. S. Doc. 347, 67th Cong., 4th sess.

[12] National Recovery Administration, Division of Review—*Manufacturer's Control of Distribution: A Study of Trade Practice Provisions in Selected N. R. A. Codes*, by Irwin S. Moise and George B. Haddock; Work Materials No. 62, March 1936, pp. 136, 147.

TABLE III.—*The price of salt as reported—1929 to 1936*

[American table salt—Medium grade. Wholesale price per barrel of 280 pounds delivered in Chicago]

| | Relative 1926=100 |
|---|---|
| 1933: | |
| January | 99.6 |
| February | 99.6 |
| March | 99.6 |
| April | 99.6 |
| May | 99.6 |
| June. (New quantity discounts 2 to 10 percent.) | 99.6 |
| July | 99.6 |
| August | 108.8 |
| September | 111.2 |
| October | 108.9 |
| November | 108.9 |
| December | 108.9 |
| 1934: | |
| January | 108.9 |
| February | 108.9 |
| March | 108.9 |
| April | 108.9 |
| May | 108.9 |
| June | 108.9 |
| July | 108.9 |
| August | 108.9 |
| September. (Increase in quantity discounts.) | 108.9 |
| October | 108.9 |
| November | 115.7 |
| December. (Price war begins.) | 115.7 |
| 1935: | |
| January | 117.1 |
| February | 117.1 |
| March | 117.1 |
| April | 117.6 |
| May | 118.5 |
| June | 118.5 |
| July | 118.5 |
| August | 118.5 |
| September. (20- to 30-percent discounts from list.) | 118.5 |
| October | 106.6 |
| November | 106.6 |
| December | 106.6 |

## Geographic Price Relations

The precise geographic point to which a quoted price applies is, of course, of primary importance in defining its meaning. A delivered price and a plant price are two distinct entities. Most of the prices reported by the Bureau of Labor Statistics fall into three categories:

1. Plant prices, with the location of the plant not specified.

2. Prices at specified basing points.

3. Delivered prices at some important market. (In the case of certain commodities—particularly foodstuffs—quotations for a number of principal markets are published.)

When the price trends for different commodities are compared, due allowance must be made for these differences in the kind of quotation. Delivered prices include the element of freight, which is, of course, quite inflexible. Consequently the amplitude of movement of delivered prices, measured in terms of percentage, is narrower than would be the movement of plant prices for the same commodity. For bulky, inexpensive commodities, the difference may be very material. For example, the average plant value per ton of lime declined 20 percent between 1929 and 1934. The average delivered price declined only 12 percent during the same period.[13]

Moreover, delivered prices at a specific market may not accurately reflect the general trend throughout the nation. For example, chart 1 presents a comparison between the price trend for crushed stone produced in New York State and New Jersey and the price trend for all crushed stone produced in the United States, based upon data reported by the Bureau of Mines. In addition, the chart shows the Bureau of Labor Statistics wholesale price index for crushed stone, which is quoted on the basis of delivery at New York. The Bureau of Labor Statistics index for the period of 1920–29 shows a trend closely parallel to that of the Bureau of Mines index based upon New York and New Jersey stone. The national index, however, shows a distinctly different trend. Both of the former two indexes show virtually no net change in price from 1920 to 1929. In contrast, the average price throughout the nation declined more than 20 percent during the same period.

## Definition of Commodity

A major problem encountered in almost any form of price reporting is the formulation of a precise definition of the commodity to which the price series applies. A large proportion of the Bureau of Labor Statistics price indexes relate to perfectly standard commodities, such as No. 2 Red Winter Wheat, electrolytic copper, or 66° Baumé sulphuric acid. In many other cases the degree of standardization is sufficient for all practical purposes, as in the case of portland cement.

In the case of nonstandard goods such as apparel or machinery, however, the problem of definition assumes major proportions. The validity of the index in cases of this sort is conditioned by two distinct considerations.

1. Is the definition sufficiently precise to insure that the trend of the index over a period of years reflects only changes in price and not changes in the nature of the commodity?

2. Is the specific commodity selected sufficiently representative to portray adequately the price trend for all commodities in the same class?

[13] National Recovery Administration Division of Review, *Operation of the Basing Point System in the Lime Industry Code*, by T. K. Urdahl. (Based on data shown on p. 71.)

#### Precision of the Definition

The first problem—precision of the definition—is of basic importance in the case of such items as agricultural machinery, automobiles, and apparel. In the first two cases it is virtually impossible to secure a price series applying to exactly the same product from year to year. No two successive automobile models are alike. The same is true, though possibly to a lesser extent, of agricultural machinery. In fact, the very small number of machinery items included in the Bureau of Labor Statistics weighted index is due primarily to the nonstandard character of most types of machinery.

In the case of apparel, the Bureau of Labor Statistics has attempted to formulate definitions that would minimize the effect of style variations. Thus, 21 different series are published for shoes, including, for example, little boy's tan calf shoes, men's side leather oxfords, and women's patent leather pumps. Similarly, in the case of men's shirts, the character of the material is carefully specified. Moreover, due to the impossibility of adequately allowing for style changes in women's suits and dresses these products have been deliberately omitted.

Despite all these precautions, it is still probable that the prices reported to the Bureau of Labor Statistics fail adequately to account for changes in the style and workmanship of apparel. In the case of men's shirts, for example, defining the material alone is not an adequate criterion. Changes in style and workmanship are of at least equal importance. There has been a progressive improvement in the fabrication of men's shirts over a considerable number of years. This improvement is not, and cannot be, allowed for in the construction of the index.

#### Representative Character of the Indexes

In the attempt to restrict reporting to relatively standard commodities which can be precisely defined, there is danger of impairing the representative character of the index. For example, again considering men's shirts, the proportion of all shirts manufactured which are produced in accordance with Bureau of Labor Statistics specifications may be small. The price trend for shirts as a whole may differ materially from that shown for the Bureau of Labor Statistics standard.

To take another instance, price data are reported for an 8-ounce package of a corn cereal breakfast food. This series represents a single product of a single company. It is possible that the products of other companies, or even other products of the same company, may show a price trend differing substantially from that quoted for this specific item.

This problem is complicated by the presence of trademarks and private brands. In very many lines, articles bearing private brands are sold at a large discount from the price of the identical product carrying the manufacturer's nationally advertised label. The number and importance of private brands has increased very materially in recent years. Due to the stimulus of recent legislation, it is likely to increase further. Consequently, even though the price of a manufacturer's brand remains stable, the average price for all similar articles, regardless of brand, may be declining materially.

It is impossible on the basis of available data to appraise the importance of either of the factors discussed in this section. It is probably a fair statement, however, that some of the Bureau of Labor Statistics indexes fail to reflect fully changes in the quality of the product and that others apply to a restricted and possibly not sufficiently representative segment of the market.

### Comparison of Price Quotations With Computed Net Values

The existence of all these indirect forms of price variation makes it essential to estimate quantitatively the extent to which they affect the validity of the Bureau of Labor Statistics price series. Statistics compiled by the Census of Manufactures and the Bureau of Mines were employed in the attempt to arrive at such a measure.

These two sources publish figures revealing both aggregate annual physical volume and dollar value of production for a considerable number of commodities. (Some of these data are available for each year, while some are compiled only for alternate years.) From these statistics, an average net value at plant or mine may be computed and compared with the corresponding Bureau of Labor Statistics price series where they cover the same commodities or groups of commodities.

Net value and price are not, of course, synonymous. Price relates to a specific, single commodity while net value represents an annual average for all products included within the classification. However, if the classification is sufficiently narrow, net value at plant or mine will not differ materially from net wholesale prices after all discounts and concessions have been deducted. In such cases, it may be reasonably expected that the movements of net value and price will be closely parallel. If the net value for any commodity be expressed in terms of an index, the movement of that index should vary but slightly from that of the Bureau of Labor Statistics index for the same product.

There are, of course, obvious difficulties in the way of comparisons of this character. The product classifications used by the Bureau of the Census and the Bureau of Mines rarely conform exactly with those used by the Bureau of Labor Statistics. However, it has been possible to select a considerable number of items for

which the classification is identical, or nearly so. For many more, despite differences in classification, it still seems possible to draw a comparison.

A second difficulty is inherent in the nature of the census figures. The Census Bureau, in issuing its blanks, does not instruct manufacturers to base "value of product" upon actual net returns from sales. Instead, value is to be computed by multiplying the number of units produced by the average price during the period. Undoubtedly, the basis of computation actually used by individual manufacturers varies considerably. Special difficulties arise when "sales" take the form of inter-branch transfers, as when a factory transfers merchandise to a regional sales branch. In such cases, "value" will be based upon the price recorded in the company's books, and may well range all the way from actual cost of manufacture to the nominal wholesale price level prevailing at the time. Nevertheless, in the majority of returns, it is probable that the reported "value" is a close approximation of the net income from sales. Moreover, census data have the advantage of covering an entire industry rather than a small selected sample. "Net value" as computed from census reports must be recognized as constituting a good approximation rather than an absolutely accurate figure. Whereas differences between the Bureau of Labor Statistics price and the census net value at any one time may not be significant, an examination of their relative behavior over a period of years should afford a valuable clue to the reliability of the Bureau of Labor Statistics data.

Comparisons for sample items have been presented in chart I. Indexes for additional commodities are compared in table IV. Except where noted, the items mentioned in the following discussion are shown in table IV. Indexes have been based upon the 1929 average as 100. This base was selected in order to show more clearly the relative extent to which the Bureau of Labor Statistics price and the computed net value declined during the depression.

In some cases, the Bureau of Labor Statistics price and the computed value show widely different trends. In others, significant but narrower differences exist. In the rest, the movement of the two indexes is virtually parallel. These three groups will be considered separately.

#### Cases of Wide Disparity

Very wide differences between the trend of the Bureau of Labor Statistics index and computed net value occur in the case of two standard chemical products—66° Baumé sulphuric acid (chart I) and bone black.

The Bureau of Labor Statistics indexes for both of these products are extremely rigid. In the case of sulphuric acid no change in price was reported from 1928 through 1936. The price of bone black has remained perfectly stable from 1923 through 1936. In each of these two cases the computed net value shows a totally different picture. The net value of 66° Baumé sulphuric acid dropped 20 per cent from 1929 to 1933 and that for bone black showed an approximately equal decline.

The explanation of this disparity seems clear. The Bureau of Labor Statistics prices are obtained, not from direct reports, but from trade paper quotations. These quotations may apply to very small purchases, but large quantities are sold on the basis of individual negotiations. In most cases sales are on the basis of annual contracts and the nominal quotation is significant only as the point from which bargaining starts.

A somewhat similar picture is presented in the case of petroleum asphalt. The Bureau of Labor Statistics index for this product is also rigid. It is also based upon a trade paper quotation. Although the quotation itself dropped about 16 percent during the depression the actual plant net value dropped approximately twice as far—32 percent. Moreover, the decline in net value had persisted for 4 years (from 1927 to 1931), before the nominal quotation reflected what was happening.

There is a wide discrepancy between the Bureau of Labor Statistics quotation for aluminum ingots and the price trend as computed from census data (chart I). To some extent, this may be explained by the fact that the Bureau of Labor Statistics data are for virgin aluminum, 99 percent plus pure, while census figures are for both primary and secondary metal, whose purity may fall as low as 98 percent. This difference, however, is not of major significance. The Bureau of Labor Statistics index is based upon quotations in the *American Metal Market*. The price of secondary aluminum is also reported by this publication. It is noteworthy that the census figures, which include both primary and secondary metal, are even lower than those for secondary aluminum alone. Moreover, the Aluminum Co. of America proclaims the policy of maintaining no fixed prices, but of dealing with each customer independently. It may be inferred, then, that the Bureau of Labor Statistics quotation for the virgin metal is purely nominal.

A very different market condition exists in the case of men's dress shirts (chart I). Here again the Bureau of Labor Statistics index is extremely rigid. The Bureau of Labor Statistics quotation shows only a nominal drop during the depression, while the average net value as computed from census data declined more than 36 percent from 1929 to 1933.

In this case the product classification is not identical. The Bureau of Labor Statistics data are for a shirt

made from a carefully specified material, while the census figures relate to all shirts.

The significant factor in this case is the peculiar structure of the market. Men's shirts, like many other lines of apparel, are traditionally sold in certain fixed price classes. Thus, in the retail market, there are $2.95 shirts, $2.50 shirts, $1.95 shirts, $1.69 shirts, and so on down. Corresponding to these retail prices are wholesale prices per dozen which show similar variations. Shirts are not sold at intermediate levels. The wholesale prices will be either—say, $18 or $15 per dozen, but not $16.50 per dozen. The product is manufactured to a price. During the depression a shirt of quality and workmanship which originally sold for $1.95 could be purchased by the consumer for $1.69 or less. Quotations, however, apparently remained rigid. Changes in price took the form of changes in workmanship and style, rather than in the traditionally established wholesale price range.

On the other hand, the census index undoubtedly exaggerates the extent of the price drop. During the depression there was a marked shift of consumers from the better to cheaper garments. It may be assumed safely that the average shirt purchased during 1932 was not comparable in quality with the average sold during 1929. The true course of the market probably lay somewhere between the Bureau of Labor Statistics and the census index.

Wide discrepancies also appear in the case of certain less rigid indexes. Hydrated lime and portland cement are examples of this character. Both of these indexes, while not flexible, display a moderate response to market changes. However, additional factors, such as changes in terms or special concessions, apparently exist which the Bureau of Labor Statistics data fail to reflect. The drop in plant net value during the depression as computed from Bureau of Mines data, was considerably wider than that shown by the Bureau of Labor Statistics for quoted prices. From 1929 to 1932 the Bureau of Labor Statistics index for cement declined approximately 15 percent, while that based on Bureau of Mines figures fell 30 percent. In the case of hydrated lime, the Bureau of Labor Statistics decline was 14 percent as compared to 24 percent for the Bureau of Mines data.

Even flexible prices do not appear to be exempt from this type of variation. The Bureau of Labor Statistics index shows the price of yellow pine lumber as very flexible, yet it registered a decline of only 20 percent from 1929 to 1932, whereas census data indicated a drop of 32 percent. In this case, of course, the product classification is not strictly comparable. Nevertheless, the general parallelism in the course of prices between 1919 and 1929 makes it seem probable that the comparison is reasonably valid. Moreover, there is ample evidence that lumber producers often grant special prices not in accord with listed quotations in order to dispose of their product.

In each of these cases, therefore, the Bureau of Labor Statistics index indicated an apparent rigidity greater than the true price structure warranted, and failed to reflect adequately the extent of the price decline during the depression.

#### Cases of Moderate Disparity

Narrower, but appreciable differences between Bureau of Labor Statistics price quotations and computed net values may be noted in a number of the cases illustrated. Thus, for polished plate glass, the Bureau of Labor Statistics publishes two series, while only one is available in the series based on the Census of Manufactures. The table shows a close general correspondence between Bureau of Labor Statistics series no. 2 and census figures. During the depression, however, the census shows a more rapid decline in prices from 1929 to 1931, than does the Bureau of Labor Statistics. By 1935 the indexes were again practically identical. Presumably, again, the Bureau of Labor Statistics quotation failed to reflect changes in terms and special concessions.

Census figures for book paper and wood screws also show a somewhat wider decline than do Bureau of Labor Statistics. In neither of these cases is there strict product comparability and, therefore, only limited reliance may be placed upon the comparison. However, from 1921 to 1931, the Bureau of Labor Statistics and Census prices for book paper run closely similar courses.

An interesting comparison is available in the case of sand-lime brick (chart I). The Bureau of Labor Statistics index for this commodity is quite rigid. Nevertheless, the comparison shows that it fully reflected the drop in net value which took place between 1929 and 1932. The decline in the Bureau of Labor Statistics index, however, took place a year later than did that in the Bureau of Mines figures. It seems likely that the price decline first took the form of indirect or secret concessions. When these become established, the quoted prices followed the full extent of the true decline.

#### Cases of Close Correspondence

In a very considerable number of cases, Bureau of Labor Statistics price series and net values computed from Census and Mines data show very close correspondence. Cases of this sort occur both for rigid and for flexible prices. For example, steel rails, concrete reinforcing bars, structural steel (chart I), and pig iron all show a close parallelism between the Bureau of Labor Statistics and Census prices. Other rigid, "adminis-

tered" prices such as salt cake (chart I) exhibit similar characteristics. The same is true of complex manufactured products such as farm machinery. The close correlation shown by the two series for hay loaders, grain binders, and mowers is very striking. The same may be said of such diverse commodities as mixed fertilizer, fire brick, washing machines, and window glass.

Highly flexible prices such as those for denims (chart I), canned peaches, and dried peaches, show an almost perfect correspondence between Bureau of Labor Statistics and Census figures.

In certain cases, although quantitative data are not available, there is evidence that the Bureau of Labor Statistics price quotation is entirely accurate. This is true, for example, of iron ore, the quoted price for which is known to be rigidly adhered to.

TABLE IV.—*Comparison of price indexes, Bureau of Labor Statistics and Census of Manufactures or Bureau of Mines, 1919–36*

[1929=100]

| Year | Bone black | | Asphalt | | Hydrated lime | | Portland cement | |
|---|---|---|---|---|---|---|---|---|
| | Bureau of Labor Statistics | Census | Bureau of Labor Statistics | Bureau of Mines | Bureau of Labor Statistics | Bureau of Mines | Bureau of Labor Statistics | Bureau of Mines |
| 1919 | 100.0 | 108.9 | | | | | 110.3 | 115.6 |
| 1920 | | | | | | | 127.6 | 136.5 |
| 1921 | 116.9 | 164.3 | | | 124.0 | 113.6 | 120.6 | 127.7 |
| 1922 | | | | | 111.5 | 108.3 | 112.7 | 119.0 |
| 1923 | 100.0 | 105.9 | | | 124.8 | 121.1 | 117.5 | 128.4 |
| 1924 | | | | | 119.7 | 121.7 | 115.1 | 122.3 |
| 1925 | 100.0 | 86.2 | 104.5 | 121.8 | 114.8 | 118.8 | 111.8 | 119.7 |
| 1926 | | | 100.0 | 120.1 | 108.1 | 114.7 | 108.9 | 115.6 |
| 1927 | 100.0 | 92.6 | 100.0 | 125.2 | 105.3 | 110.8 | 105.3 | 109.5 |
| 1928 | | | 100.0 | 114.7 | 103.0 | 101.9 | 104.5 | 106.1 |
| 1929 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1930 | | | 100.0 | 95.3 | 98.7 | 94.5 | 100.3 | 97.3 |
| 1931 | 100.0 | 84.5 | 100.0 | 76.6 | 92.9 | 83.9 | 87.0 | 74.3 |
| 1932 | | | 83.3 | 68.4 | 85.5 | 76.5 | 84.7 | 68.3 |
| 1933 | 100.0 | 78.2 | 87.5 | 86.0 | 88.4 | 81.2 | 91.4 | 89.9 |
| 1934 | | | 100.0 | 97.1 | 96.2 | 92.6 | 102.2 | 104.2 |
| 1935 | 100.0 | 100.0 | 100.0 | 88.4 | 95.6 | 95.9 | 103.9 | 102.1 |
| 1936 | | | 100.0 | 89.5 | 92.8 | 96.8 | 104.1 | 102.1 |

| Year | Lumber—yellow pine | | Polished plate glass | | | Book paper | | Woodscrews | |
|---|---|---|---|---|---|---|---|---|---|
| | Bureau of Labor Statistics | Census | Bureau of Labor Statistics [1] | Bureau of Labor Statistics [2] | Census | Bureau of Labor Statistics | Census | Bureau of Labor Statistics | Census |
| 1919 | 110.2 | 111.9 | 132.1 | 151.3 | 173.9 | | | | |
| 1920 | | | | | | | | | |
| 1921 | 78.2 | 75.7 | 179.0 | 183.5 | 196.4 | 134.0 | 138.2 | | |
| 1922 | 88.4 | 92.2 | | | | | | | |
| 1923 | 109.7 | 116.2 | 149.3 | 181.7 | (*) | 121.7 | 121.7 | | |
| 1924 | 94.6 | 103.5 | | | | | | | |
| 1925 | 97.2 | 103.1 | 119.2 | 143.6 | 144.5 | 109.0 | 117.5 | | |
| 1926 | 102.0 | 103.4 | | | | | | | |
| 1927 | 93.3 | 92.6 | 92.2 | 102.6 | 111.1 | 108.7 | 107.8 | | |
| 1928 | 86.5 | 95.9 | | | | | | | |
| 1929 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1930 | 88.9 | 82.1 | | | | | | | |
| 1931 | 79.0 | 66.2 | 94.3 | 94.8 | 87.8 | 88.5 | 88.6 | 88.5 | 90.2 |
| 1932 | | | | | | | | | |
| 1933 | 80.2 | 69.8 | 95.7 | 95.2 | (*) | 79.1 | 68.6 | 81.6 | 74.6 |
| 1934 | 101.9 | 81.3 | | | | | | | |
| 1935 | 95.1 | 71.1 | 70.0 | 67.6 | 69.9 | 92.2 | 78.2 | 75.9 | 67.2 |
| 1936 | | | | | | | | | |

* No data available.
[1] Polished glazing area, 3–5 square feet per square foot.
[2] Polished glazing area, 5–10 square feet per square foot.

TABLE IV.—*Comparison of price indexes, Bureau of Labor Statistics and Census of Manufactures or Bureau of Mines, 1919–36*—Continued

| Year | Steel rails | | Concrete reinforcing bars | | Pig iron (Ala.) | | Hay loader | |
|---|---|---|---|---|---|---|---|---|
| | Bureau of Labor Statistics | Census | Bureau of Labor Statistics | Census | Bureau of Labor Statistics | Census | Bureau of Labor Statistics | Census |
| 1919 | 114.6 | 101.0 | 123.3 | 140.3 | | | | |
| 1920 | 125.2 | | 142.6 | | | | | |
| 1921 | 106.2 | 110.0 | 99.5 | 116.5 | | | 93.5 | 89.4 |
| 1922 | 94.6 | | 85.6 | | | | 74.8 | (*) |
| 1923 | 100.0 | 97.6 | 113.4 | 120.5 | | | 91.4 | 96.6 |
| 1924 | 100.0 | | 110.4 | | | | 107.0 | 105.2 |
| 1925 | 100.0 | 99.4 | 101.5 | 113.4 | | | 101.9 | 98.8 |
| 1926 | 100.0 | | 98.5 | | 139.9 | 124.8 | 101.9 | 103.1 |
| 1927 | 100.0 | 99.2 | 92.6 | 103.6 | 115.3 | 111.6 | 100.8 | 100.6 |
| 1928 | 100.0 | | 94.5 | | 105.7 | 103.2 | 100.8 | 102.2 |
| 1929 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1930 | 100.0 | | 89.1 | | 93.4 | 83.7 | 97.7 | 101.0 |
| 1931 | 100.0 | 99.9 | 81.2 | 85.7 | 81.0 | 76.5 | 96.8 | 103.1 |
| 1932 | 98.6 | | 77.2 | | 73.0 | 68.0 | 94.3 | (*) |
| 1933 | 91.5 | 90.3 | 83.2 | 79.0 | 81.5 | 71.2 | 94.3 | 98.5 |
| 1934 | 84.6 | | 94.1 | | 93.6 | 85.3 | | |
| 1935 | 84.6 | 86.4 | 96.5 | 97.5 | 96.6 | 90.6 | | |
| 1936 | | | | | 103.2 | 92.7 | | |

| Year | Grain binders | | Mower | | Mixed fertilizer | | Fire brick | |
|---|---|---|---|---|---|---|---|---|
| | Bureau of Labor Statistics | Census | Bureau of Labor Statistics | Census | Bureau of Labor Statistics | Census | Bureau of Labor Statistics | Census |
| 1919 | | | | | | | | |
| 1920 | | | | | | | | |
| 1921 | | | | | | | | |
| 1922 | 84.5 | 78.0 | | | | | | |
| 1923 | 95.3 | 88.7 | 95.6 | 90.4 | | | | |
| 1924 | 107.0 | 101.8 | 108.9 | 104.7 | | | | |
| 1925 | 100.8 | 95.7 | 100.8 | 96.4 | | | | |
| 1926 | 100.8 | 93.6 | 100.8 | 95.6 | | | 96.5 | 103.0 |
| 1927 | 100.8 | 93.0 | 100.8 | 97.3 | 95.3 | 89.5 | 98.3 | 102.6 |
| 1928 | 100.8 | 96.5 | 100.8 | 95.6 | | | 100.0 | 101.8 |
| 1929 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1930 | 97.8 | 103.0 | 97.1 | 98.5 | | | 100.0 | 104.1 |
| 1931 | 97.0 | 97.1 | 97.1 | 98.1 | 84.5 | 84.5 | 94.4 | 97.8 |
| 1932 | 94.7 | (*) | 95.6 | (*) | | | 84.1 | 91.0 |
| 1933 | 94.7 | (*) | 99.9 | 96.2 | 66.3 | 66.7 | 92.9 | 94.2 |
| 1934 | 98.8 | (*) | | | | | 104.6 | 102.9 |
| 1935 | 100.8 | 97.7 | | | 72.6 | 78.9 | 104.6 | 105.0 |
| 1936 | 100.8 | 104.1 | | | | | | |

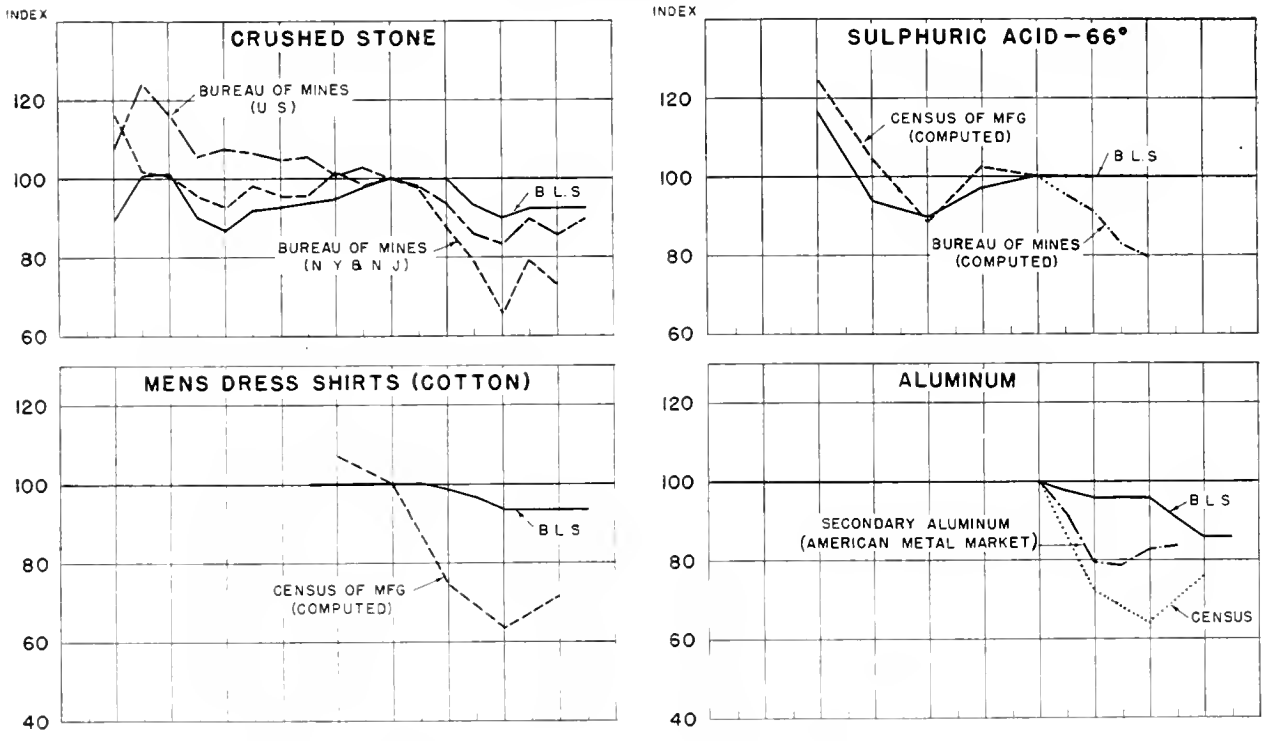
| Year | Washing machines | | Window glass | | | Canned peaches | | Dried peaches | |
|---|---|---|---|---|---|---|---|---|---|
| | Bureau of Labor Statistics | Census | Bureau of Labor Statistics [1] | Bureau of Labor Statistics [2] | Census | Bureau of Labor Statistics | Census | Bureau of Labor Statistics | Census |
| 1919 | | | 156.0 | 182.0 | 172.4 | | | | |
| 1920 | | | | | | | | | |
| 1921 | | | 140.7 | 164.1 | 143.0 | | | | |
| 1922 | | | | | | | | | |
| 1923 | | | 101.7 | 105.6 | (*) | | | | |
| 1924 | | | | | | | | | |
| 1925 | | | 78.7 | 90.5 | 102.5 | | | | |
| 1926 | | | | | | | | | |
| 1927 | 137.2 | 117.6 | 84.1 | 87.1 | 86.4 | 85.2 | 78.5 | 83.2 | 85.0 |
| 1928 | | | | | | 83.1 | | 84.3 | |
| 1929 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1930 | | | | | | 90.6 | | 82.7 | |
| 1931 | 80.7 | 77.5 | 63.3 | 60.5 | 59.8 | 73.4 | 64.4 | 59.5 | 58.3 |
| 1932 | | | | | | 63.9 | | 46.5 | |
| 1933 | 53.5 | 58.9 | 71.2 | 67.3 | 65.0 | 60.5 | 57.1 | 52.5 | 47.5 |
| 1934 | | | | | | 74.0 | | 71.1 | |
| 1935 | | | 68.8 | 64.5 | 65.6 | 77.2 | 64.9 | 71.8 | 62.5 |
| 1936 | | | | | | 70.5 | | 72.1 | |

* No data available.
[1] Single—"A."
[2] Single—"B."

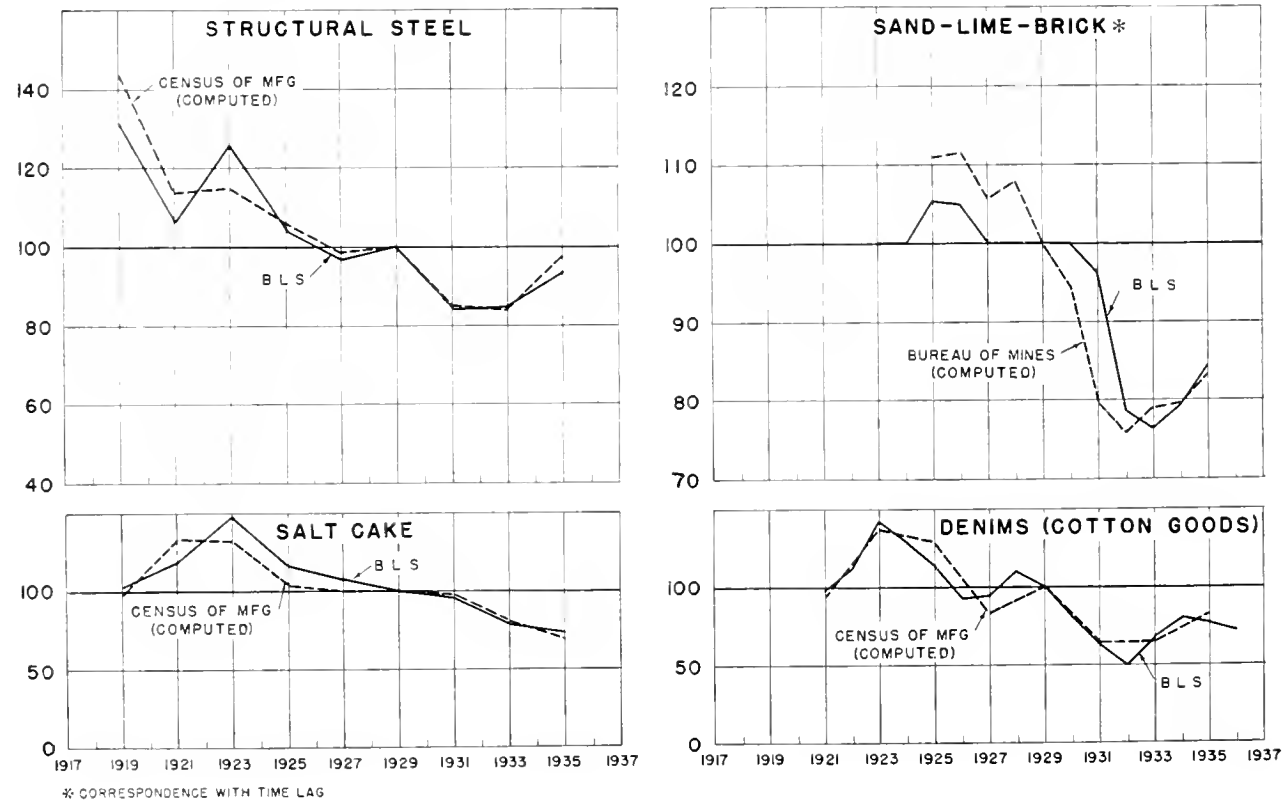
## COMPARISON OF PRICE INDEXES

B L S COMPARED WITH CENSUS OF MANUFACTURES OR BUREAU OF MINES
(1929 = 100)

### EXAMPLES OF DISPARITY




### EXAMPLES OF CLOSE CORRESPONDENCE




* CORRESPONDENCE WITH TIME LAG

**Conclusion**

On the basis of the evidence presented, it may be concluded that Bureau of Labor Statistics data fail to present an accurate picture of price movements in the case of certain commodities. This seems particularly true of heavy chemicals, such as sulphuric acid, and of other commodities such as petroleum asphalt and aluminum for which the source of information is trade paper quotations. Even where price series are based upon reports by manufacturers, the quotations may be largely nominal during periods of severe economic stress, as in the case of lime and cement. For products such as men's shirts, which are particularly hard to define precisely, the Bureau of Labor Statistics series may fall far short of accuracy.

On the other hand, it is significant that Bureau of Labor Statistics data do not appear to exaggerate the rigidity of the price structures of important commodities and commodity groups such as, for instance, steel rails and agricultural machinery. Although series based upon direct reporting are probably, on the whole, more accurate than some of those derived from trade journals, there seems no reason for generally rejecting the latter with the possible exception of the chemical group.[14] Trade paper quotations for such items as iron ore and steel rails have been shown to be reliable. For commodities sold on open markets, prices listed in trade publications may be presumed to be perfectly accurate.

These observations make the use of caution in dealing with individual price series imperative. However, they do not preclude the use of Bureau of Labor Statistics wholesale price data as statistical bases for broad economic investigations. In analyses of price rigidity and amplitude of price movement, it becomes necessary to place emphasis upon broad and consistent relationships and to avoid relying upon small differences in absolute figures. Yet, after all due allowance is made for the factors demanding caution, very marked and significant differences still remain between the behavior of rigid and flexible prices. For the statement and interpretation of such different types of price behavior, Bureau of Labor Statistics series can be regarded as furnishing an acceptable basis.

[14] The Bureau of Labor Statistics is now in the process of revising its chemical series.

# APPENDIX 2[1].—WHOLESALE PRICE DATA

In the following tables, the commodities which go to make up the Bureau of Labor Statistics index of wholesale prices are classified according to various characteristics; are grouped on the basis of frequency and magnitude of price change; and are presented, group by group, in the form of indexes, running on an annual basis from 1913 to 1937.

In table I various characteristics and classifications of the 784 individual items are listed. In the first column the code numbers are indicated, by which the prices are referred to in various Bureau of Labor Statistics publications. In a number of cases where several quotations were obtained by the Bureau of Labor Statistics for the same or very similar commodities, it was found desirable to combine such quotations into one index in order to avoid weighting such items too heavily in the unweighted averages used in computing various indexes. Where this was done the new composite price is denoted by the lowest code number among the prices entering into the composite with the letter c affixed, thus: 2c, 6c. The individual items which were combined to make up such composites may be identified by referring to the notes after column 16.

A brief description of each commodity price is given in column 2. More complete specifications of the commodities are available in the mimeographed pamphlet *Wholesale Prices—Specifications of Commodities Entering Into the Composite Weighted Index*, Bureau of Labor Statistics, Division of Wholesale Prices, September 1935.

In column 3 is given the period for which fairly complete data are available. In some cases scattered data are available outside the period given, but are too scanty for ready use in further analysis. On the other hand, the absence of a month or two from the series has usually not been considered sufficient to warrant rejecting the data; the missing month has usually been supplied by interpolation.

In columns 4, 5, and 6, the commodities priced are classified according to the degree of fabrication to which they have been subjected. In column 4 the classification into raw materials and manufactured goods follows that published by the National Bureau of Economic Research in appendix II of *Economic Tendencies in the United States* by Frederick C. Mills. Not all the prices are so classified by Mills, and in a few cases the precise quotation to which the classification made in *Economic Tendencies* refers is not quite certain. Column 5 gives the classification into raw, semifinished, and finished goods according to the classification given by the Bureau of Labor Statistics, Division of Wholesale Prices, in *Wholesale Prices* for December 1937. Column 6 gives a somewhat more detailed classification prepared by the staff of the National Resources Committee. Commodities which pass through two or more stages of manufacture and so may at some time become a semifinished good are classified into raw, semifinished, and finished, designated R, S, and F, respectively. There are, however, some commodities which undergo no processing at all and are consumed substantially in the raw state. Such commodities are thus at the same time raw materials and finished goods, and are designated RF. There are also some commodities which undergo only one stage of manufacture and so never pass through the stage of being semifinished goods, at least in the open market. The raw material stage of such goods is designated RS, and the finished state SF.

Columns 7, 8, and 9 classify the items according to their durability. In general the criterion is durability under continuous use—i. e., normally rendering successive services—rather than mere absence of perishability. In column 7 the classification is that given to the corresponding Census industries (see column 16) in table 3 of *Employment and Pay Rolls* of the Bureau of Labor Statistics (e. g., the issue for October 1937). On this basis, the classification is somewhat indirect and occasionally yields anomalous results, as when matches are classed as durable. In column 8 the classification is taken from appendix I of *Economic Tendencies* in which various commodities are classified for use in production indexes rather than price indexes and the relation to the price indexes is somewhat indirect. In column 9 the classification by the staff of the National Resources Committee is given.

Column 10 classifies the items according to use, i. e., goods entering into capital equipment, producer's goods entering human consumption, and consumer goods. In column 11 the items are classified as food, clothing, and "other." Columns 12 and 13 classify the items as to source—in column 12 according to whether the source of the item is farm or nonfarm, and in column 13 according to whether the source is crop, animal, forest, or mineral. These classifications are taken from the National Bureau of Economic Research, except for the items classified as clothing and "other" which are by the staff of the National Resources Committee.

In column 14 the commodities are classified by the staff of the National Resources Committee according to source of activity, i. e., according to the industry that contributed the greatest value for that stage of

[1] Appendix 2 was prepared by William S. Vickrey.

activity. Four classifications are given, i.e., agricultural, forestry and fishing, mining, and manufacturing. For the manufactured goods the classification was made according to value added, i.e., when valued added was 30 percent or greater the commodity was classed in manufacturing, otherwise it was classified in one of the other groups.

In column 15 commodities are classified according to the degree to which the product of a manufacturer is subject to the direct competition of similar products. Where the same commodity with substantially identical specifications is obtainable from several producers, the article is classified as a standard commodity, designated S; where there are differences between the product of one producer and that of another producing substantially the same commodity, or where the producer by advertising, packaging, use of trade-marks, or other means, has succeeded in creating the illusion in the mind of the public that such differences exist, the commodity is classified as differentiated, designated D; and where differentiation of the product is carried to the extent that the products of different producers are no longer directly comparable as to price without taking into consideration possible differences in the tastes of the consumer, the commodity is classed as unique, designated U.

In column 16 the Census classification number of the industry in which the commodity is produced is given. In the case of raw materials, the source is given, i. e., agriculture, mining, or import. An item is classed as an import if the preponderance of the supply is imported regardless of whether a considerable proportion of the supply may be produced domestically. Complete descriptions of the industries to which the industry code numbers refer are given in *Industry Classifications for the Census of Manufactures, 1935 and 1937*, Bureau of Census. The 1935 numbers were used for all industries but textiles, for which the 1937 numbers were used.

In column 17 is given the number of changes in price occurring during the period from January 1926 to December 1933, there being a total of 96 monthly quotations and therefore a possible maximum of 95 changes. In the case of composites, the total number of changes in all of the prices entering into the composite was divided by the number of components and the result evened off to the nearest integer. Prices were then classified into 10 frequency groups according to the frequency of change, the group intervals being adjusted so that the prices are distributed as evenly as possible among the ten groups. Prices changing least frequently were put in group I and those changing most frequently in group X. Group X was then further subdivided into Xa and Xb by putting into group Xb those prices which had shown a change every month, or a total of 95 changes, leaving in group Xa those prices having shown 93 or 94 changes. These group numbers are listed in column 18.

In column 19 is given an index of depression sensitivity for each of the 617 items included in the frequency groups. The index is calculated by subtracting the 1932 price index from the arithmetic average of the 1929 and 1937 price indexes (all prices expressed as a percent relative of the 1929 price).[2] This measure estimates in part the influence of the nondepression factors such as were at work between 1926 and 1929. Such a measure is superior to the drop in price from 1929–32 or a rise in price from 1932–37, because any change in the price not attributable to the depression is partly averaged out. On this basis, prices are grouped into 10 groups from the least to the most sensitive. The depression sensitivity group numbers are given in column 20 for each of the 617 items.

In columns 21, 22, 23 and 24 are shown the price indexes for each of the items used in the sensitivity groups for the years 1926, 1929, 1932, and 1937, in each case the base being 1929=100.

In table II the prices are listed by frequency groups. This table also shows the range of frequency corresponding to each group and gives the depression sensitivity group number for each price.

In table III the prices are listed according to depression sensitivity groups. The range of sensitivity for each group is given, and within each group the prices are given in order of increasing sensitivity.

Table IV gives annual indexes computed from these groupings. The first 10 lines are frequency group indexes, which are simple unweighted geometric averages of the items in each frequency group, shifted from a 1926=100 to a 1926–29=100 base. Similar indexes are also given for the 10 sensitivity groups. The frequency slope is the regression coefficient obtained when the frequency group indexes for a given year are related to the group number. To retain more nearly the normal distribution of the data and to avoid the influence of the general price level upon this coefficient, the calculation was carried out in terms of logarithms, the result being expressed in percent change in price per group. The Bureau of Labor Statistics *Index of Wholesale Prices* and the Federal Reserve Board *Index of Industrial Production* shifted to a 1926–29=100 base are also given for comparison.

Table IV–A gives data for the period 1913 to 1926 similar to those in table IV except that 11 items which showed extreme and disproportionate rises in price during the war period when supplies of these commodities from Germany were cut off have been eliminated. These items are Nos. 598, 609, 611, (dyestuffs); 620, 659, 660, 661, 662, (potash salts); 632

(*Continued on Page 200*)

[2] In those cases where the 1932 price is greater than the average of 1929 and 1937 prices, the index is negative. In such cases, the 1932 price is greater than the 1929 price or the 1937 price.

TABLE I.—*Tentative price classifications*

| B. L. S. code No. | Name of commodity | Price data available | Fabrication | | | Durability | | | Use, N. B. E. R. | Clothing, food, and other, N. R. C. | Source | | | | Census industry classification | Price flexibility | | | | Price indexes | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Raw or manufactured, N. B. E. R. | Raw, semifinished or finished | | Durable, nondurable, B. L. S. | Durable, semidurable, nondurable | | | | Farm or nonfarm, N. B. E. R. | Crop, animal, forest, or mineral, N. B. E. R. | Agriculture, manufacturing, mining, forestry, and fishing, N. R. C. | Product differentiation, unique, differentiated or standard, N. R. C. | | Frequency of change 1926–33 N. R. C. | | Sensitivity N. R. C. | | 1929=100 | | | |
| | | | | B. L. S. | N. R. C. | | N. B. E. R. | N. R. C. | | | | | | | | Changes in 95 chances | Group No. | Index of depression sensitivity | Group No. | 1926 | 1929 | 1932 | 1937 |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) | (17) | (18) | (19) | (20) | (21) | (22) | (23) | (24) |
| | I FARM PRODUCTS | | | | | | | | | | | | | | | | | | | | | | |
| | *Grains* | | | | | | | | | | | | | | | | | | | | | | |
| 1 | Barley, malting | 1926–38 | R | R | R | | N | N | M | F | F | C | A | | Agriculture | 95 | X–b | 55.2 | 10 | 100.5 | 100.0 | 61.3 | 133.0 |
| 2c | Corn | 1913–38 | R | R | R | | N | N | M | F | F | C | A | | do | 95 | X–b | 71.5 | 10 | 79.9 | 100.0 | 32.9 | 108.8 |
| 2 | Corn, No. 2, Yellow | 1913–38 | R | R | R | | N | N | M | F | F | C | A | | do | Included in 2c. | | | | | | | |
| 3 | Corn, No. 3, Yellow | 1913–38 | R | R | R | | N | N | M | F | F | C | A | | do | | | | | | | | |
| 4 | Oats, No. 2, White | 1913–38 | R | R | R | | N | N | M | F | F | C | A | | do | 95 | X–b | 52.0 | 10 | 88.6 | 100.0 | 43.0 | 90.0 |
| 5 | Rye, No. 2 | 1913–38 | R | R | R | | N | N | M | F | F | C | A | | do | 95 | X–b | 59.5 | 10 | 93.9 | 100.0 | 38.6 | 96.2 |
| 6c | Wheat | 1913–38 | R | R | R | | N | N | M | F | F | C | A | | do | 95 | X–b | 54.1 | 10 | 118.2 | 100.0 | 43.7 | 95.6 |
| 6 | Wheat, No. 2, Red Winter | 1913–38 | R | R | R | | N | N | M | F | F | C | A | | do | | | | | | | | |
| 7 | Wheat, No. 2, Hard | 1913–38 | R | R | R | | N | N | M | F | F | C | A | | do | | | | | | | | |
| 8 | Wheat, No. 1, Northern Spring | 1913–38 | R | R | R | | N | N | M | F | F | C | A | | do | | | | | | | | |
| 9 | Wheat, No. 2, Dark Northern Spring | 1913–38 | R | R | R | | N | N | M | F | F | C | A | | do | Included in 6c. | | | | | | | |
| 10 | Wheat, No. 1, Hard White | 1913–38 | R | R | R | | N | N | M | F | F | C | A | | do | | | | | | | | |
| 11 | Wheat, No. 2, Red Winter | 1913–38 | R | R | R | | N | N | M | F | F | C | A | | do | | | | | | | | |
| | *Livestock and poultry* | | | | | | | | | | | | | | | | | | | | | | |
| 12 | Calves, vealers | 1913–38 | R | R | RS | | N | N | M | F | F | A | A | | do | 94 | X–a | 44.0 | 9 | 82.4 | 100.0 | 40.9 | 69.9 |
| 13c | Cows | 1913–38 | R | R | RS | | N | N | M | F | F | A | A | | do | 94 | X–a | 48.9 | 10 | 70.2 | 100.0 | 41.4 | 80.6 |
| 13 | Cows, fair to good | 1913–38 | R | R | RS | | N | N | M | F | F | A | A | | do | Included in 13c. | | | | | | | |
| 14 | Cows, good to choice | 1913–38 | R | R | RS | | N | N | M | F | F | A | A | | do | | | | | | | | |
| 15c | Steers | 1913–38 | R | R | RS | | N | N | M | F | F | A | A | | do | 95 | X–b | 45.9 | 9 | 41.6 | 100.0 | 32.6 | 57.0 |
| 15 | Steers, fair to good | 1915–38 | R | R | RS | | N | N | M | F | F | A | A | | do | Included in 15c. | | | | | | | |
| 16 | Steers, good to choice | 1916–38 | R | R | RS | | N | N | M | F | F | A | A | | do | | | | | | | | |
| 17c | Hogs | 1913–38 | R | R | RS | | N | N | M | F | F | A | A | | do | 94 | X–a | 63.0 | 10 | 121.2 | 100.0 | 37.8 | 101.5 |
| 17 | Hogs, heavy butchers | 1913–38 | R | R | RS | | N | N | M | F | F | A | A | | do | Included in 17c. | | | | | | | |
| 18 | Hogs, light butchers | 1913–38 | R | R | RS | | N | N | M | F | F | A | A | | do | | | | | | | | |
| 19c | Sheep | 1913–38 | R | R | RS | | N | N | M | F | F | A | A | | do | 88 | IX | 54.6 | 10 | 103.5 | 100.0 | 32.6 | 74.3 |
| 19 | Ewes, natives | 1913–38 | R | R | RS | | N | N | M | F | F | A | A | | do | Included in 19c. | | | | | | | |
| 20 | Lambs, western | 1926–38 | R | R | RS | | N | N | M | F | F | A | A | | do | 94 | X–a | 46.0 | 9 | 98.6 | 100.0 | 42.1 | 76.3 |
| 21 | Wethers, fed | 1913–38 | R | R | RS | | N | N | M | F | F | A | A | | do | Included in 19c. | | | | | | | |
| 22c | Poultry, live | 1913–38 | R | R | RS | | | N | M | F | F | A | A | | do | 95 | X–b | 28.4 | 7 | 93.8 | 100.0 | 55.0 | 66.7 |
| 22 | Poultry, live, Chicago | 1913–38 | R | R | RS | | | N | M | F | F | A | A | | do | Included in 22c. | | | | | | | |
| 23 | Poultry, live, New York | 1913–38 | R | R | RS | | | N | M | F | F | A | A | | do | | | | | | | | |
| | *Other farm products* | | | | | | | | | | | | | | | | | | | | | | |
| 24c | Cotton, middling | 1913–38 | R | R | R | | S | S | M | O | F | C | A | | do | 95 | X–b | 46.3 | 9 | 91.1 | 100.0 | 33.7 | 60.0 |
| 24 | Cotton, Galveston | 1913–38 | R | R | R | | S | S | M | O | F | C | A | | do | Included in 24c. | | | | | | | |
| 25 | Cotton, New Orleans | 1913–38 | R | R | R | | S | S | M | O | F | C | A | | do | | | | | | | | |
| 26 | Cotton, New York | 1913–38 | R | R | R | | S | S | M | O | F | C | A | | do | | | | | | | | |
| 27c | Eggs, fresh | 1913–38 | R | R | RF | | N | N | C | F | F | A | A | | do | 94 | X–a | 30.8 | 7 | 94.3 | 100.0 | 55.2 | 65.9 |
| 27 | Eggs, Boston | 1913–38 | R | R | RF | | N | N | C | F | F | A | A | | do | Included in 27c. | | | | | | | |
| 28 | Eggs, Chicago | 1913–38 | R | R | RF | | N | N | C | F | F | A | A | | do | | | | | | | | |
| 29 | Eggs, Cincinnati | 1913–38 | R | R | RF | | N | N | C | F | F | A | A | | do | | | | | | | | |
| 30 | Eggs, New Orleans | 1913–38 | R | R | RF | | N | N | C | F | F | A | A | | do | 94 | X–a | 28.2 | 7 | 114.0 | 100.0 | 53.8 | 64.0 |
| 31 | Eggs, New York | 1913–38 | R | R | RF | | N | N | C | F | F | A | A | | do | Included in 27c. | | | | | | | |
| 32 | Eggs, Philadelphia | 1913–38 | R | R | RF | | N | N | C | F | F | A | A | | do | | | | | | | | |
| 33 | Eggs, San Francisco | 1913–38 | R | R | RF | | N | N | C | F | F | A | A | | do | | | | | | | | |
| 34 | Apples, Chicago | 1932–38 | R | R | RF | | N | N | C | F | F | C | A | | do | Discarded—inadequate data. | | | | | | | |
| 35 | Apples, New York | 1926–38 | R | R | RF | | N | N | C | F | F | C | A | | do | 95 | X–b | 22.6 | 5 | 67.6 | 100.0 | 52.0 | 49.3 |
| 36 | Apples, Seattle | 1913–38 | R | R | RF | | N | N | C | F | F | C | A | | do | 86 | IX | 45.8 | 9 | 78.2 | 100.0 | 39.6 | 70.7 |
| 37 | Lemons | 1913–38 | R | R | RF | | | N | C | F | F | C | A | | do | 95 | X–b | 18.0 | 5 | 65.0 | 100.0 | 66.7 | 69.5 |
| 38 | Oranges | 1913–38 | R | R | RF | | | N | C | F | F | C | A | | do | 95 | X–b | 25.3 | 6 | 91.1 | 100.0 | 58.4 | 67.4 |
| 39 | Alfalfa hay | 1913–38 | R | R | R | | | N | M | F | F | C | A | | do | 91 | IX | 39.4 | 8 | 85.6 | 100.0 | 49.4 | 77.6 |
| 40c | Hay | 1913–38 | R | R | R | | N | N | M | F | F | C | A | | do | 83 | IX | 29.3 | 7 | 119.0 | 100.0 | 65.2 | 89.0 |
| 40 | Hay, clover | 1913–38 | R | R | R | | N | N | M | F | F | C | A | | do | Included in 40c. | | | | | | | |
| 41 | Hay, timothy | 1913–38 | R | R | R | | N | N | M | F | F | C | A | | do | | | | | | | | |
| 42 | Hops | 1913–38 | R | R | R | | | N | M | F | F | C | A | | do | 94 | X–a | 47.4 | 9 | 172.4 | 100.0 | 100.2 | 195.2 |
| 43 | Milk, Chicago | 1913–38 | R | R | RF | | | N | C | F | F | A | A | | do | 29 | VI | 11.4 | 3 | 94.5 | 100.0 | 73.8 | 70.3 |
| 44 | Milk, New York | 1913–38 | R | R | RF | | | N | C | F | F | A | A | | do | 30 | VI | 30.0 | 7 | 90.7 | 100.0 | 59.6 | 79.1 |
| 45 | Milk, San Francisco | 1913–38 | R | R | RF | | | N | C | F | F | A | A | | do | 13 | IV | 19.6 | 5 | 99.7 | 100.0 | 72.3 | 83.7 |
| 46 | Peanuts | 1913–38 | R | R | RS | | | N | C | F | F | C | A | | do | 73 | VIII | 61.2 | 10 | 100.2 | 100.0 | 29.0 | 80.4 |
| 47 | Alfalfa seed | 1913–38 | R | R | R | | | N | M | F | F | C | A | | do | 61 | VIII | 55.2 | 10 | 69.2 | 100.0 | 61.7 | 127.7 |
| 48 | Clover seed | 1913–38 | R | R | R | | | N | M | F | F | C | A | | do | 90 | IX | 72.4 | 10 | 116.0 | 100.0 | 47.3 | 139.4 |
| 49 | Flaxseed | 1913–38 | R | R | R | | S | N | M | F | F | C | A | | do | 95 | X–b | 45.8 | 9 | 84.2 | 100.0 | 42.7 | 76.9 |
| 50 | Timothy seed | 1913–38 | R | R | R | | | N | M | F | F | C | A | | do | 83 | IX | 34.0 | 8 | 122.9 | 100.0 | 55.8 | 79.5 |
| 51 | Tobacco, leaf | 1926–38 | R | R | RS | | N | N | M | O | F | C | A | | do | 95 | X–b | 68.0 | 10 | 99.2 | 100.0 | 42.1 | 120.2 |
| 52 | Beans, dried | 1913–38 | R | R | RF | | | N | C | F | F | C | A | | do | 93 | X–a | 56.6 | 10 | 54.5 | 100.0 | 25.2 | 63.6 |
| 53 | Onions | 1913–38 | R | R | RF | | | N | C | F | F | C | A | | do | 94 | X–a | 3.4 | 2 | 82.4 | 100.0 | 73.5 | 53.7 |
| 54 | Sweetpotatoes | 1913–38 | R | R | RF | | | N | C | F | F | C | A | | do | 78 | IX | 44.4 | 9 | 135.3 | 100.0 | 33.3 | 55.5 |
| 55c | Potatoes | 1913–38 | R | R | RF | | N | N | C | F | F | C | A | | do | 94 | X–a | 45.8 | 9 | 182.1 | 100.0 | 48.5 | 88.5 |
| 55 | Potatoes, Boston | 1913–38 | R | R | RF | | N | N | C | F | F | C | A | | do | Included in 55c. | | | | | | | |
| 56 | Potatoes, Chicago | 1913–38 | R | R | RF | | N | N | C | F | F | C | A | | do | | | | | | | | |
| 57 | Potatoes, New York | 1913–38 | R | R | RF | | N | N | C | F | F | C | A | | do | | | | | | | | |
| 58 | Potatoes, Oregon | 1913–38 | R | R | RF | | N | N | C | F | F | C | A | | do | 89 | IX | 47.4 | 9 | 122.4 | 100.0 | 49.1 | 92.9 |
| 59c | Wool, domestic | 1913–38 | R | R | RF | | S | S | M | O | F | A | A | | do | 72 | VIII | 53.1 | 10 | 110.1 | 100.0 | 45.9 | 98.0 |
| 59 | Wool, grease, cloth | 1913–38 | R | R | R | | S | S | M | O | F | A | A | | do | | | | | | | | |
| 60 | Wool, grease, delaine | 1913–38 | R | R | R | | S | S | M | O | F | A | A | | do | | | | | | | | |
| 61 | Wool, grease, half blood | 1913–38 | R | R | R | | S | S | M | O | F | A | A | | do | Included in 59c. | | | | | | | |
| 62 | Wool, grease, medium | 1913–38 | R | R | R | | S | S | M | O | F | A | A | | do | | | | | | | | |
| 63 | Wool, scoured, fine | 1913–38 | R | R | R | | S | S | M | O | F | A | A | | do | | | | | | | | |
| 64 | Wool, scoured, half blood | 1913–38 | R | R | R | | S | S | M | O | F | A | A | | do | | | | | | | | |

TABLE 1.—*Tentative price classification*—Continued

| B. L. S. code number | Name of commodity | Price data available | Fabrication: Raw or manufactured, N. B. E. R. | Fabrication: Raw, semifinished or finished: B. L. S. | Fabrication: Raw, semifinished or finished: N. B. E. R. | Durability: Durable, nondurable, B. L. S. | Durability: Durable, semidurable, nondurable: N. B. E. R. | Durability: Durable, semidurable, nondurable: N. R. C. | Use, N. B. E. R. | Clothing, food, and other, N. R. C. | Source: Farm or nonfarm, N. B. E. R. | Source: Crop, animal, forest, or mineral, N. B. E. R. | Agriculture, manufacturing, mining, forestry, and fishing, N. R. C. | Product differentiation, unique, differentiated or standard, N. R. C. | Census industry classification | Price flexibility: Frequency of change 1926–33, N. R. C.: Changes in 95 changes | Price flexibility: Frequency of change 1926–33, N. R. C.: Group number | Price flexibility: Sensitivity, N. R. C.: Index of depression sensitivity | Price flexibility: Sensitivity, N. R. C.: Group number | Price indexes: 1929=100: 1926 | 1929 | 1932 | 1937 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) | (17) | (18) | (19) | (20) | (21) | (22) | (23) | (24) |
| | I. FARM PRODUCTS—continued | | | | | | | | | | | | | | | | | | | | | | |
| | *Other farm products*—Continued | | | | | | | | | | | | | | | | | | | | | | |
| 65c | Wool, foreign | 1913–38 | R | R | R | ... | S | S | M | O | F | A | A I | S | Import | 63 | VIII | 60.4 | 10 | 95.8 | 100.0 | 36.8 | 94.3 |
| 65 | Wool, Argentine | 1913–38 | R | R | R | ... | S | S | M | O | F | A | A I | S | ...do | Included in 65c. | | | | | | | |
| 66 | Wool, Australian | 1913–38 | R | R | R | ... | S | S | M | O | F | A | A I | S | ...do | | | | | | | | |
| 67 | Wool, Montevideo | 1913–38 | R | R | R | ... | S | S | M | O | F | A | A I | S | ...do | | | | | | | | |
| | II. FOODS | | | | | | | | | | | | | | | | | | | | | | |
| | *Dairy products* | | | | | | | | | | | | | | | | | | | | | | |
| 68c | Butter, creamery | 1913–38 | M | F | SF | N | ... | N | C | F | F | A | A | S | 103 | 94 | X–a | 44.1 | 9 | 62.7 | 100.0 | 30.6 | 49.4 |
| 68 | Butter, Boston Extra | 1913–38 | M | F | SF | N | ... | N | C | F | F | A | A | S | 103 | | | | | | | | |
| 69 | Butter, Boston, 1st | 1913–38 | M | F | SF | N | ... | N | C | F | F | A | A | S | 103 | | | | | | | | |
| 70 | Butter, Boston, 2d | 1913–38 | M | F | SF | N | ... | N | C | F | F | A | A | S | 103 | | | | | | | | |
| 71 | Butter, Chicago, Extra | 1913–38 | M | F | SF | N | ... | N | C | F | F | A | A | S | 103 | | | | | | | | |
| 72 | Butter, Chicago, Extra, 1st | 1913–38 | M | F | SF | N | ... | N | C | F | F | A | A | S | 103 | | | | | | | | |
| 73 | Butter, Chicago, 1st | 1913–38 | M | F | SF | N | ... | N | C | F | F | A | A | S | 103 | | | | | | | | |
| 74 | Butter, Cincinnati | 1913–38 | M | F | SF | N | ... | N | C | F | F | A | A | S | 103 | | | | | | | | |
| 75 | Butter, New Orleans, Fancy | 1913–38 | M | F | SF | N | ... | N | C | F | F | A | A | S | 103 | | | | | | | | |
| 76 | Butter, New Orleans, Choice | 1913–38 | M | F | SF | N | ... | N | C | F | F | A | A | S | 103 | | | | | | | | |
| 77 | Butter, New York, Extra | 1913–38 | M | F | SF | N | ... | N | C | F | F | A | A | S | 103 | Included in 68c. | | | | | | | |
| 78 | Butter, New York, 1st | 1913–38 | M | F | SF | N | ... | N | C | F | F | A | A | S | 103 | | | | | | | | |
| 79 | Butter, New York, 2d | 1913–38 | M | F | SF | N | ... | N | C | F | F | A | A | S | 103 | | | | | | | | |
| 80 | Butter, Philadelphia, Extra | 1913–38 | M | F | SF | N | ... | N | C | F | F | A | A | S | 103 | | | | | | | | |
| 81 | Butter, Philadelphia, Extra, 1st | 1913–38 | M | F | SF | N | ... | N | C | F | F | A | A | S | 103 | | | | | | | | |
| 82 | Butter, Philadelphia, 1st | 1913–38 | M | F | SF | N | ... | N | C | F | F | A | A | S | 103 | | | | | | | | |
| 83 | Butter, St. Louis | 1913–38 | M | F | SF | N | ... | N | C | F | F | A | A | S | 103 | | | | | | | | |
| 84 | Butter, San Francisco, Extra | 1913–38 | M | F | SF | N | ... | N | C | F | F | A | A | S | 103 | | | | | | | | |
| 85 | Butter, San Francisco, 1st | 1913–38 | M | F | SF | N | ... | N | C | F | F | A | A | S | 103 | | | | | | | | |
| 86c | Cheese, whole, milk | 1913–38 | M | F | SF | N | ... | N | C | F | F | A | A | S | 107 | 94 | X–a | 35.7 | 8 | 99.2 | 100.0 | 53.8 | 79.0 |
| 86 | Cheese, Chicago | 1913–38 | M | F | SF | N | ... | N | C | F | F | A | A | S | 107 | | | | | | | | |
| 87 | Cheese, New York | 1926–38 | M | F | SF | N | ... | N | C | F | F | A | A | S | 107 | Included in 86c. | | | | | | | |
| 88 | Cheese, San Francisco | 1913–38 | M | F | SF | N | ... | N | C | F | F | A | A | S | 107 | | | | | | | | |
| 89 | Condensed milk | 1913–38 | M | F | SF | N | ... | N | C | F | F | A | A | D | 111 | 38 | VII | 12.8 | 3 | 95.4 | 100.0 | 76.9 | 79.4 |
| 90 | Evaporated milk | 1913–38 | M | F | SF | N | ... | N | C | F | F | A | A | D | 111 | 56 | VIII | 26.1 | 6 | 103.0 | 100.0 | 65.4 | 83.0 |
| 91 | Powdered skim milk | 1926–38 | M | F | SF | N | ... | N | C | F | F | A | A | S | 111 | 42 | VII | 39.0 | 8 | 129.2 | 100.0 | 55.9 | 89.7 |
| | *Cereal products* | | | | | | | | | | | | | | | | | | | | | | |
| 92 | Bread, Chicago | 1913–38 | M | F | F | N | ... | N | C | F | F | C | M | D | 102 | 14 | IV | −1.9 | 1 | 100.0 | 100.0 | 93.7 | 77.7 |
| 93 | Bread, Cincinnati | 1913–38 | M | F | F | N | ... | N | C | F | F | C | M | D | 102 | 17 | V | 30.2 | 7 | 100.1 | 100.0 | 64.3 | 89.0 |
| 94 | Bread, New Orleans | 1913–38 | M | F | F | N | ... | N | C | F | F | C | M | D | 102 | 16 | IV | 34.0 | 8 | 107.5 | 100.0 | 64.1 | 96.2 |
| 95 | Bread, New York | 1913–38 | M | F | F | N | ... | N | C | F | F | C | M | D | 102 | 5 | II | 10.3 | 3 | 105.7 | 100.0 | 90.9 | 102.4 |
| 96 | Bread, San Francisco | 1913–38 | M | F | F | N | ... | N | C | F | F | C | M | D | 102 | 6 | II | −1.8 | 1 | 111.1 | 100.0 | 102.6 | 101.7 |
| 97 | Cereal, corn | 1926–38 | M | F | SF | N | ... | N | C | F | F | C | M | D | 106 | 1 | I | −3.1 | 1 | 100.0 | 100.0 | 100.0 | 93.8 |
| 98 | Cereal, oatmeal | 1913–38 | M | F | SF | N | ... | N | C | F | F | C | A | D | 106 | 95 | X–b | 42.6 | 9 | 98.0 | 100.0 | 58.4 | 101.9 |
| 99 | Cereal, wheat | 1926–38 | M | F | SF | N | ... | N | C | F | F | C | M | D | 106 | 4 | I | 10.6 | 3 | 100.0 | 100.0 | 87.4 | 96.1 |
| 100 | Crackers, soda | 1913–38 | M | F | F | N | ... | N | C | F | F | C | M | D | 102 | 11 | III | 22.9 | 5 | 133.9 | 100.0 | 82.9 | 111.6 |
| 101 | Crackers, sweet | 1926–38 | M | F | F | N | ... | N | C | F | F | C | M | D | 102 | 11 | III | 5.6 | 2 | 104.2 | 100.0 | 96.7 | 104.7 |
| 102 | Flour, rye | 1913–38 | M | F | S | N | N | N | C | F | F | C | A | S | 116 | 95 | X–b | 39.7 | 9 | 89.5 | 100.0 | 50.4 | 89.2 |
| 103c | Flour, wheat | 1913–38 | M | F | S | N | N | N | C | F | F | C | A | S | 116 | 92 | IX | 39.6 | 9 | 123.2 | 100.0 | 57.9 | 95.1 |
| 103 | Flour, Standard Patent, Buffalo | 1913–38 | M | F | S | N | N | N | C | F | F | C | A | S | 116 | | | | | | | | |
| 104 | Flour, 1st, clear, Buffalo | 1913–38 | M | F | S | N | N | N | C | F | F | C | A | S | 116 | | | | | | | | |
| 105 | Flour, Short Patents, Kansas City | 1913–38 | M | F | S | N | N | N | C | F | F | C | A | S | 116 | | | | | | | | |
| 106 | Flour, Straight, Kansas City | 1913–38 | M | F | S | N | N | N | C | F | F | C | A | S | 116 | | | | | | | | |
| 107 | Flour, Standard Patents, Minneapolis | 1913–38 | M | F | S | N | N | N | C | F | F | C | A | S | 116 | | | | | | | | |
| 108 | Flour, 2d, Patents, Minneapolis | 1913–38 | M | F | S | N | N | N | C | F | F | C | A | S | 116 | Included in 103c. | | | | | | | |
| 109 | Flour, Patents, Oregon | 1913–38 | M | F | S | N | N | N | C | F | F | C | A | S | 116 | | | | | | | | |
| 110 | Flour, Shorts, Patents, St. Louis | 1913–38 | M | F | S | N | N | N | C | F | F | C | A | S | 116 | | | | | | | | |
| 111 | Flour, Straight, St. Louis | 1913–38 | M | F | S | N | N | N | C | F | F | C | A | S | 116 | | | | | | | | |
| 112 | Flour, Standard Patents, Toledo | 1913–38 | M | F | S | N | N | N | C | F | F | C | A | S | 116 | | | | | | | | |
| 113 | Hominy grits | 1913–38 | M | F | SF | N | ... | N | C | F | F | C | A | S | 106 | 95 | X–b | 77.6 | 10 | 81.4 | 100.0 | 34.0 | 123.1 |
| 114 | Macaroni | 1926–38 | ... | F | F | ... | ... | N | C | F | ... | ... | M | D | 121 | 32 | VI | 41.0 | 9 | 118.5 | 100.0 | 65.4 | 112.9 |
| 115 | Corn meal, white | 1913–38 | M | F | SF | N | ... | N | C | F | F | C | A | S | 116 | 95 | X–b | 77.6 | 10 | 81.4 | 100.0 | 34.0 | 123.1 |
| 116 | Corn meal, yellow | 1913–38 | M | F | SF | N | ... | N | C | F | F | C | A | S | 116 | 88 | IX | 59.0 | 10 | 91.2 | 100.0 | 42.6 | 103.1 |
| 117 | Pretzels | 1926–38 | ... | F | F | N | ... | N | ... | F | ... | ... | M | D | 102 | 10 | III | 12.8 | 3 | 99.2 | 100.0 | 96.6 | 118.8 |
| 118 | Rice, Blue Rose | 1915–38 | M | F | SF | N | ... | N | C | F | F | C | A | S | 127 | 80 | IX | 38.0 | 8 | 160.5 | 100.0 | 58.4 | 92.8 |
| 119 | Rice, Edith | 1913–38 | M | F | SF | N | ... | N | C | F | F | C | A | S | 127 | 72 | VIII | 16.2 | 4 | 154.6 | 100.0 | 73.0 | 78.5 |
| | *Fruits and vegetables* | | | | | | | | | | | | | | | | | | | | | | |
| 120 | Canned apples | 1926–38 | ... | F | SF | N | ... | N | ... | F | ... | ... | M | D | 105 | 27 | VI | 20.3 | 5 | 84.9 | 100.0 | 75.8 | 92.2 |
| 121 | Canned apricots | 1926–38 | ... | F | SF | N | ... | N | ... | F | ... | ... | M | D | 105 | 58 | VIII | 23.4 | 6 | 109.9 | 100.0 | 68.1 | 83.1 |
| 122 | Canned cherries | 1926–38 | ... | F | SF | N | ... | N | ... | F | ... | ... | M | D | 105 | 24 | VI | 25.6 | 6 | 102.0 | 100.0 | 62.9 | 77.0 |
| 123 | Canned peaches | 1926–38 | M | F | SF | N | ... | N | C | F | F | C | M | D | 105 | 64 | VIII | 24.8 | 6 | 105.2 | 100.0 | 63.9 | 77.3 |
| 124 | Canned pears | 1926–38 | ... | F | SF | N | ... | N | ... | F | ... | ... | M | D | 105 | 54 | VIII | 23.7 | 6 | 95.6 | 100.0 | 56.3 | 60.9 |
| 125 | Canned pineapple | 1926–38 | M | F | SF | N | ... | N | C | F | N | C | M | D | 105 | 25 | VI | 26.6 | 6 | 95.9 | 100.0 | 64.5 | 82.3 |
| 126 | Dried apples | 1913–38 | ... | F | SF | N | ... | N | ... | F | ... | ... | A | S | 105 | 81 | IX | 39.0 | 8 | 84.4 | 100.0 | 48.4 | 74.9 |

TABLE I.—*Tentative price classification*—Continued

| B. L. S. code number | Name of commodity | Price data available | Fabrication | | | Durability | | | Use, N. B. E. R. | Clothing, food, and other, N. R. C. | Source | | Agriculture, manufacturing, mining, forestry, and fishing, N. R. C. | Product, differentiation, unique, differentiated or standard, N. R. C. | Census industry classification | Price flexibility | | | | Price indexes | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Raw or manufactured, N. B. E. R. | Raw, semifinished or finished | | Durable, nondurable, B. L. S. | Durable, semidurable, nondurable | | | | Farm or nonfarm, N. B. E. R. | Crop, animal, forest, or mineral, N. B. E. R. | | | | Frequency of change 1926–33 N. R. C. | | Sensitivity N. R. C. | | 1929=100 | | | |
| | | | | B. L. S. | N. R. C. | | N. B. E. R. | N. R. C. | | | | | | | | Changes in 95 changes | Group number | Index of depression sensitivity | Group number | 1926 | 1929 | 1932 | 1937 |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (12) | (14) | (15) | (16) | (17) | (18) | (19) | (20) | (21) | (22) | (23) | (24) |
| | II. FOODS—continued | | | | | | | | | | | | | | | | | | | | | | |
| | *Fruits and vegetables*—Contd | | | | | | | | | | | | | | | | | | | | | | |
| 127 | Dried apricots | 1926–38 | | F | SF | N | | N | | F | | | A | S | 105 | 89 | IX | 37.2 | 8 | 137.7 | 100.0 | 42.7 | 59.8 |
| 128 | Dried currants | 1913–38 | | F | SF | N | | N | | F | | | A | S | 105 | 37 | VII | 5.6 | 2 | 70.7 | 100.0 | 85.4 | 82.0 |
| 129 | Dried peaches | 1926–38 | | F | SF | N | | N | | F | | | A | S | 105 | 89 | IX | 36.6 | 8 | 114.3 | 100.0 | 46.5 | 66.3 |
| 130 | Dried prunes | 1926–38 | M | F | SF | N | | N | C | F | F | C | A | S | 105 | 92 | IX | 38.2 | 8 | 77.3 | 100.0 | 35.1 | 46.6 |
| 131 | Raisins, seedless | 1926–38 | M | F | SF | N | | N | C | F | F | C | A | S | 105 | 82 | IX | −1.4 | 1 | 142.2 | 100.0 | 105.8 | 108.7 |
| 132 | Bananas | 1913–38 | R | R | RF | N | | N | C | F | N | C | A-1 | S | Import | 50 | VIII | 9.0 | 3 | 138.9 | 100.0 | 97.8 | 113.5 |
| 133 | Canned asparagus | 1926–38 | | F | SF | N | | N | | F | | | M | D | 105 | 22 | V | 13.3 | 4 | 101.5 | 100.0 | 86.0 | 98.6 |
| 134 | Canned baked beans | 1926–38 | | F | SF | N | | N | | F | | | M | D | 105 | 25 | VI | 27.2 | 6 | 96.2 | 100.0 | 68.7 | 91.7 |
| 135 | Canned corn | 1913–38 | M | F | SF | N | | N | C | F | F | C | M | D | 105 | 51 | VIII | 29.0 | 7 | 91.0 | 100.0 | 60.2 | 78.5 |
| 136 | Canned peas | 1913–38 | M | F | SF | N | | N | C | F | F | C | M | D | 105 | 36 | VII | .1 | 1 | 106.3 | 100.0 | 96.8 | 93.8 |
| 137 | Canned spinach | 1926–38 | | F | SF | N | | N | | F | | | M | D | 105 | 55 | VIII | 8.6 | 3 | 99.2 | 100.0 | 87.5 | 92.3 |
| 138 | Canned string beans | 1913–38 | M | F | SF | N | | N | C | F | F | C | M | D | 105 | 46 | VII | 31.2 | 7 | 76.6 | 100.0 | 51.2 | 64.7 |
| 139 | Canned tomatoes | 1913–38 | M | F | SF | N | | N | C | F | F | C | M | D | 105 | 35 | VII | 16.8 | 4 | 85.5 | 100.0 | 67.1 | 67.9 |
| | *Meats* | | | | | | | | | | | | | | | | | | | | | | |
| 140 | Beef, cured | 1923–38 | M | F | SF | N | N | N | C | F | F | A | A | S | 123 | 90 | IX | 42.5 | 9 | 83.1 | 100.0 | 48.7 | 82.4 |
| 141c | Beef, fresh | 1913–38 | M | F | SF | N | N | N | C | F | F | A | A | S | 123 | 74 | VIII | 35.8 | 8 | 71.7 | 100.0 | 60.6 | 92.9 |
| 141 | Beef, fresh, Chicago | 1913–38 | M | F | SF | N | N | N | C | F | F | A | A | S | 123 | Included in 141c. | | | | | | | |
| 142 | Beef, fresh, New York | 1913–38 | M | F | SF | N | N | N | C | F | F | A | A | S | 123 | | | | | | | | |
| 143 | Lamb, fresh | 1913–38 | M | F | SF | N | N | N | C | F | F | A | A | S | 123 | | | | | | | | |
| 144 | Mutton, fresh | 1913–38 | M | F | SF | N | N | N | C | F | F | A | A | S | 123 | 94 | X–a | 32.1 | 7 | 102.4 | 100.0 | 52.4 | 69.0 |
| 145 | Bacon | 1913–38 | M | F | SF | N | N | N | C | F | F | A | A | S | 123 | 91 | X–a | 32.2 | 7 | 102.5 | 100.0 | 50.0 | 64.3 |
| 146 | Cured pork belly cleared | 1913–38 | M | F | SF | N | N | N | C | F | F | A | A | D | 123 | 72 | VIII | 53.1 | 10 | 115.7 | 100.0 | 47.2 | 100.6 |
| 147 | Cured pork belly rib | 1913–38 | M | F | SF | N | N | N | C | F | F | A | A | S | 123 | 87 | IX | 69.8 | 10 | 117.4 | 100.0 | 42.6 | 124.8 |
| 148 | Cured hams | 1913–38 | M | F | SF | N | N | N | C | F | F | A | A | S | 123 | 90 | IX | 74.1 | 10 | 132.6 | 100.0 | 50.3 | 148.8 |
| 149 | Mess pork | 1913–38 | M | F | SF | N | N | N | C | F | F | A | A | D | 123 | 95 | X–b | 42.8 | 9 | 125.9 | 100.0 | 54.5 | 94.6 |
| 150 | Pork, fresh, comp | 1923–38 | M | F | SF | N | N | N | C | F | F | A | A | S | 123 | 90 | IX | 46.1 | 9 | 123.3 | 100.0 | 57.3 | 106.8 |
| 151 | Veal, fresh | 1913–38 | M | F | SF | N | N | N | C | F | F | A | A | S | 123 | 93 | X–a | 57.1 | 10 | 122.2 | 100.0 | 42.7 | 99.6 |
| 152 | Poultry, dressed, Chicago | 1926–38 | M | F | SF | N | N | N | C | F | F | A | A | S | 123 | 95 | X–b | 42.6 | 9 | 82.0 | 100.0 | 39.7 | 64.6 |
| 153 | Poultry, dressed, New York | 1913–38 | M | F | SF | N | N | N | C | F | F | A | A | S | 126 | 85 | IX | 27.4 | 6 | 96.4 | 100.0 | 57.0 | 68.9 |
| | *Other foods* | | | | | | | | | | | | | | 126 | 93 | X–a | 26.8 | 6 | 97.8 | 100.0 | 54.7 | 62.9 |
| 154 | Ginger ale | 1926–38 | | F | F | N | | N | | F | | | M | U | 101 | 2 | I | −.1 | 1 | 99.8 | 100.0 | 82.5 | 64.8 |
| 155 | Grape juice | 1926–38 | | F | SF | N | | N | | F | | | M | U | 105 | 10 | III | 17.6 | 5 | 100.0 | 100.0 | 71.7 | 78.5 |
| 156 | Plain soda | 1926–38 | | F | F | N | | N | | F | | | M | U | 101 | 4 | I | 1.6 | 2 | 100.0 | 100.0 | 94.5 | 92.3 |
| 157 | Cocoa beans | 1913–38 | R | R | RS | | | N | M | F | N | C | I | S | Import | 95 | X–b | 25.4 | 6 | 116.7 | 100.0 | 60.1 | 71.1 |
| 158 | Powdered cocoa | 1926–38 | | F | SF | N | | N | | F | | | M | D | 109 | 9 | III | 11.0 | 3 | 100.0 | 100.0 | 72.5 | 67.1 |
| 159 | Coffee, Rio | 1913–38 | R | R | RS | | | N | C | F | N | C | A-1 | S | Import | 94 | X–a | 26.8 | 6 | 115.6 | 100.0 | 51.2 | 56.0 |
| 160 | Coffee, Santos | 1913–38 | R | R | RS | | | N | C | F | N | C | A-1 | S | do | 94 | X–a | 26.6 | 6 | 100.9 | 100.0 | 48.4 | 50.1 |
| 161 | Copra | 1913–38 | R | R | R | | | N | M | F | N | C | A-1 | S | do | 87 | IX | 47.9 | 10 | 130.9 | 100.0 | 43.6 | 83.0 |
| 162 | Canned salmon, pink | 1926–38 | M | F | SF | N | | N | C | F | N | O | M | D | 104 | 30 | VI | 25.6 | 6 | 89.0 | 100.0 | 61.1 | 73.3 |
| 163 | Canned salmon, red | 1913–38 | M | F | SF | N | | N | C | F | N | O | M | D | 104 | 58 | VIII | 25.4 | 6 | 122.7 | 100.0 | 68.6 | 87.9 |
| 164 | Pickled cod | 1913–38 | M | F | SF | N | | N | C | F | N | O | F | S | 104 | 56 | VIII | 27.6 | 7 | 91.9 | 100.0 | 65.3 | 85.9 |
| 165 | Pickled herring | 1913–38 | M | F | SF | N | | N | C | F | N | O | F | S | 104 | 60 | VIII | 14.2 | 4 | 85.3 | 100.0 | 55.9 | 40.2 |
| 166 | Salt mackerel | 1926–38 | M | F | SF | N | | N | C | F | N | O | F | S | 104 | 58 | VIII | 42.7 | 9 | 74.5 | 100.0 | 42.0 | 69.4 |
| 167 | Smoked salmon | 1913–38 | M | F | SF | N | | N | C | F | N | O | F | S | 104 | 54 | VIII | 27.6 | 7 | 81.2 | 100.0 | 56.5 | 68.3 |
| 168 | Glucose | 1913–38 | M | F | S | N | | N | M | F | F | C | M | S | 113 | 43 | VII | 35.4 | 8 | 87.5 | 100.0 | 64.9 | 100.5 |
| 169 | Grape jam | 1926–38 | | F | SF | N | | N | | F | | | M | U | 105 | 17 | V | 11.4 | 3 | 116.4 | 100.0 | 65.5 | 53.9 |
| 170 | Lard | 1913–38 | M | F | SF | N | | N | C | F | F | A | A | S | 123 | 94 | X–a | 56.8 | 10 | 125.6 | 100.0 | 42.1 | 97.9 |
| 171 | Molasses | 1913–38 | M | F | SF | N | | N | C | F | F | C | I | S | 130 | 17 | V | 8.8 | 3 | 98.9 | 100.0 | 83.9 | 85.3 |
| 172 | Oleomargarine | 1913–38 | M | F | F | N | | N | C | F | F | O | A | D | 124 | 40 | VII | 38.6 | 8 | 97.1 | 100.0 | 41.4 | 60.1 |
| 173 | Oleo oil | 1913–38 | M | F | S | N | | N | M | F | F | A | A-1 | S | 120 | 74 | VIII | 55.0 | 10 | 110.4 | 100.0 | 51.8 | 113.5 |
| 174 | Peanut butter | 1926–38 | | F | SF | N | | N | | F | | | M | D | 117 | 22 | V | 42.7 | 9 | 99.0 | 100.0 | 53.1 | 91.6 |
| 175 | Black pepper | 1913–38 | R | R | SF | | | N | C | F | N | C | M | S | Import | 94 | X–a | 29.8 | 7 | 74.3 | 100.0 | 29.1 | 17.8 |
| 176 | Salt | 1913–38 | M | F | SF | N | | N | C | F | N | M | M | S | 630 | 14 | IV | 1.6 | 2 | 99.1 | 100.0 | 105.9 | 114.9 |
| 177 | Canned soup (tomato) | 1926–38 | | F | SF | N | | N | | F | | | M | D | 105 | 17 | V | 7.5 | 2 | 99.9 | 100.0 | 92.0 | 99.0 |
| 178 | Corn starch | 1913–38 | | F | SF | N | | N | | F | | | M | D | 113 | 17 | V | 27.1 | 6 | 100.0 | 100.0 | 61.7 | 77.6 |
| 179 | Sugar, granulated | 1913–38 | M | F | F | N | N | N | C | F | F | C | M | S | 131 | 92 | IX | 17.7 | 5 | 108.5 | 100.0 | 79.2 | 93.8 |
| 180 | Sugar, raw | 1913–38 | R | S | S | N | N | N | M | F | F | C | A-1 | S | 130 | 94 | X–a | 18.2 | 5 | 115.5 | 100.0 | 77.7 | 91.8 |
| 181 | Tallow (edible) | 1913–38 | | F | S | N | | N | | F | | | A | S | 123 | 93 | X–a | 58.8 | 10 | 106.8 | 100.0 | 39.2 | 96.0 |
| 182 | Formosa tea | 1913–38 | M | F | RF | | | N | C | F | N | C | A-1 | S | Import | 22 | V | 35.3 | 8 | 111.5 | 100.0 | 58.1 | 86.8 |
| 183 | Coconut oil | 1913–38 | M | S | S | | | N | M | F | N | C | A-1 | S | do | 81 | IX | 45.9 | 9 | 125.0 | 100.0 | 53.1 | 98.0 |
| 184 | Corn oil | 1913–38 | M | F | S | N | | N | C | M | F | C | A | S | 113 | 61 | VIII | 50.2 | 10 | 116.4 | 100.0 | 48.4 | 97.3 |
| 185 | Cottonseed oil | 1913–38 | M | S | S | N | | N | M | F | F | C | A | S | 120 | 93 | X–a | 58.0 | 10 | 122.2 | 100.0 | 39.5 | 95.1 |
| 186 | Olive oil | 1913–38 | M | F | SF | N | | N | C | F | N | C | A-1 | S | 120 | 37 | VII | 23.2 | 5 | 88.7 | 100.0 | 82.3 | 110.9 |
| 187 | Peanut oil | 1916–38 | | S | S | N | | N | | F | | | A | S | 120 | 76 | VIII | 57.8 | 10 | 125.6 | 100.0 | 39.9 | 95.5 |
| 188 | Soybean oil | 1913–38 | | S | S | N | | N | | F | | | A | S | 120 | 65 | VIII | 55.8 | 10 | 105.4 | 100.0 | 35.3 | 82.1 |
| 189 | Cider vinegar | 1913–38 | M | F | SF | N | | N | C | F | F | C | M | S | 132 | 35 | VII | 20.0 | 5 | 96.7 | 100.0 | 66.1 | 72.2 |
| | III. HIDES AND LEATHER PRODUCTS | | | | | | | | | | | | | | | | | | | | | | |
| | *Shoes* | | | | | | | | | | | | | | | | | | | | | | |
| 190c | Children's shoes | 1913–38 | M | F | F | N | | S | C | C | F | A | M | U | 904 | 11 | III | 22.5 | 5 | 90.3 | 100.0 | 65.5 | 76.0 |
| 190 | Boy's shoes | 1913–38 | M | F | F | N | | S | C | C | F | A | M | U | 904 | Included in 190c. | | | | | | | |
| 191 | Child's shoes | 1913–38 | M | F | F | N | | S | C | C | F | A | M | U | 904 | 9 | III | 2.9 | 2 | 71.8 | 100.0 | 78.6 | 63.0 |
| 192 | Misses' shoes | 1926–38 | M | F | F | N | | S | C | C | F | A | M | U | 904 | Included in 190c. | | | | | | | |
| 193 | Youth's shoes | 1926–38 | M | F | F | N | | S | C | C | F | A | M | U | 904 | 10 | III | 15.5 | 4 | 108.6 | 100.0 | 79.2 | 89.4 |
| 194c | Men's shoes, calf | 1913–38 | M | F | F | N | | S | C | C | F | A | M | U | 904 | 16 | IV | 19.4 | 5 | 100.8 | 100.0 | 86.2 | 111.2 |
| 194 | Shoes, calf, blucher | 1913–38 | M | F | F | N | | S | C | C | F | A | M | U | 904 | | | | | | | | |
| 195 | Shoes, calf 4A | 1913–38 | M | F | F | N | | S | C | C | F | A | M | U | 904 | Included in 194c. | | | | | | | |
| 196 | Shoes, cord tip | 1926–38 | M | F | F | N | | S | C | C | F | A | M | U | 904 | | | | | | | | |

TABLE I.— *Tentative price classification*—Continued

| B. L. S. code number | Name of commodity | Price data available | Fabrication | | | Durability | | | Use, N. B. E. R. | Clothing, food, and other, N. R. C. | Source | | | | Census industry classification | Price flexibility | | | | Price indexes | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Raw or manufactured, N. B. E. R. | Raw, semifinished or finished | | Durable, nondurable, B. L. S. | Durable, semidurable, nondurable | | | | Farm or nonfarm, N. B. E. R. | Crop, animal, forest, or mineral, N. B. E. R. | Agriculture, manufacturing, mining, forestry, and fishing, N. R. C. | Product differentiation, unique, differentiated or standard, N. R. C. | | Frequency of change 1926–33 N. R. C. | | Sensitivity N. R. C. | | 1926=100 | | | |
| | | | | B. L. S. | N. R. C. | | N. B. E. R. | N. R. C. | | | | | | | | Changes in 95 changes | Group number | Index of depression sensitivity | Group number | 1926 | 1929 | 1932 | 1937 |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) | (17) | (18) | (19) | (20) | (21) | (22) | (23) | (24) |
| | III. HIDES AND LEATHER PRODUCTS—continued | | | | | | | | | | | | | | | | | | | | | | |
| | *Shoes*—Continued | | | | | | | | | | | | | | | | | | | | | | |
| 197 | Shoes, dress | 1926–38 | M | F | F | N | | S | C | C | F | A | M | U | 904 | 11 | III | 24.6 | 6 | 89.4 | 100.0 | 97.0 | 143.3 |
| 198 | Shoes, series 1 | 1913–38 | M | F | F | N | | S | C | C | F | A | M | U | 904 | Included in 194c | | | | | | | |
| 199 | Shoes, series 2 | 1913–38 | M | F | F | N | | S | C | C | F | A | M | U | 904 | | | | | | | | |
| 200 | Shoes, side, oxford | 1926–38 | M | F | F | N | | S | C | C | F | A | M | U | 904 | | | | | | | | |
| 201c | Shoes, men's | 1913–38 | M | F | F | N | | S | C | C | F | A | M | U | 904 | 22 | V | 18.6 | 5 | 95.1 | 100.0 | 87.0 | 111.2 |
| 201 | Shoes, kid | 1913–38 | M | F | F | N | | S | C | C | F | A | M | U | 904 | Included in 201c. | | | | | | | |
| 202c | Shoes | 1913–38 | M | F | F | N | | S | C | C | F | A | M | U | 904 | 14 | VII | 25.2 | 6 | 86.4 | 100.0 | 67.1 | 84.5 |
| 202 | Shoes, work | 1926–38 | M | F | F | N | | S | C | C | F | A | M | U | 904 | Included in 202c. | | | | | | | |
| 203 | Shoes, elk | 1913–38 | M | F | F | N | | S | C | C | F | A | M | U | 904 | | | | | | | | |
| 204 | Shoes, brown | 1913–38 | M | F | F | N | | S | C | C | F | A | M | U | 904 | Included in 201c. | | | | | | | |
| 205c | Women's shoes | 1913–38 | M | F | F | N | | S | C | C | F | A | M | U | 904 | 21 | V | 23.0 | 5 | 105.8 | 100.0 | 79.8 | 105.7 |
| 205 | Shoes, Blucher oxford | 1926–38 | M | F | F | N | | S | C | C | F | A | M | U | 904 | Included in 205c. | | | | | | | |
| 206c | Shoes, women's | 1913–38 | M | F | F | N | | S | C | C | F | A | M | U | 904 | 12 | IV | 12.4 | 3 | 93.5 | 100.0 | 90.5 | 105.8 |
| 206 | Shoes, strap | 1926–38 | M | F | F | N | | S | C | C | F | A | M | U | 904 | Included in 206c. | | | | | | | |
| 207 | Patent leather pumps | 1926–38 | M | F | F | N | | S | C | C | F | A | M | U | 904 | Included in 205c. | | | | | | | |
| 208 | Oxford pumps | 1926–38 | M | F | F | N | | S | C | C | F | A | M | U | 904 | 14 | IV | 20.0 | 5 | 104.9 | 100.0 | 63.9 | 67.8 |
| 209 | Kid pumps | 1913–38 | M | F | F | N | | S | C | C | F | A | M | U | 904 | Included in 206c. | | | | | | | |
| 210 | Shoes, elk, colors | 1913–38 | M | F | F | N | | S | C | C | F | A | M | U | 904 | Included in 205c. | | | | | | | |
| | *Hides and skins* | | | | | | | | | | | | | | | | | | | | | | |
| 211 | Cowhides | 1913–38 | R | R | S | N | | S | M | O | F | A | A | S | 123 | 86 | IX | 60.6 | 10 | 82.3 | 100.0 | 36.2 | 93.7 |
| 212c | Steer hides | 1913–38 | R | R | S | N | | S | M | O | F | A | A | S | 123 | 95 | X–b | 65.6 | 10 | 82.4 | 100.0 | 36.2 | 103.5 |
| 212 | Steer hides, native | 1913–38 | R | R | S | N | | S | M | O | F | A | A | S | 123 | Included in 212c. | | | | | | | |
| 213 | Steer hides, Texas | 1913–38 | R | R | S | N | | S | M | O | F | A | A | S | 123 | | | | | | | | |
| 214 | Calfskins | 1913–38 | R | R | S | N | | S | M | O | F | A | A | S | 123 | 90 | IX | 67.5 | 10 | 86.4 | 109.0 | 30.4 | 95.8 |
| 215 | Goat skins | 1913–38 | R | R | S | N | | S | M | O | F | A | A | S | 123 | 77 | VIII | 42.7 | 9 | 96.2 | 100.0 | 55.2 | 95.8 |
| 216 | Kip skins | 1913–38 | R | R | S | N | | S | M | O | F | A | A | S | 123 | 84 | IX | 55.9 | 10 | 83.1 | 100.0 | 34.9 | 81.6 |
| 217 | Sheepskins | 1926–38 | R | R | S | N | | S | M | O | F | A | A | S | 123 | 90 | IX | 77.0 | 10 | 107.4 | 100.0 | 25.5 | 105.0 |
| | *Leather* | | | | | | | | | | | | | | | | | | | | | | |
| 218 | Chrome leather | 1928–38 | M | S | S | N | | S | M | O | F | A | M | S | 907 | Discarded—Inadequate data. | | | | | | | |
| 219 | Glazed kid leather | 1913–38 | M | S | S | N | | S | M | O | F | A | M | S | 907 | 20 | V | 32.8 | 7 | 93.1 | 100.0 | 60.1 | 85.8 |
| 220 | Harness leather | 1926–38 | M | S | S | N | | S | M | O | F | A | M | S | 907 | 30 | VI | 22.4 | 5 | 86.7 | 100.0 | 68.0 | 80.7 |
| 221 | Side chrome leather | 1913–38 | M | S | S | N | | S | M | O | F | A | M | S | 907 | 49 | VII | 36.4 | 8 | 88.0 | 100.0 | 56.3 | 85.4 |
| 222c | Sole leather | 1913–38 | M | S | S | N | | S | M | O | F | A | M | S | 907 | 65 | VIII | 35.8 | 8 | 81.0 | 100.0 | 52.4 | 76.4 |
| 222 | Oak bends | 1913–38 | M | S | S | N | | S | M | O | F | A | M | S | 907 | | | | | | | | |
| 223 | Oak scoured backs | 1913–38 | M | S | S | N | | S | M | O | F | A | M | S | 907 | Included in 222c. | | | | | | | |
| 224 | Union back leather | 1913–38 | M | S | S | N | | S | M | O | F | A | M | S | 907 | | | | | | | | |
| 225 | Leather belting | 1926–38 | | F | F | N | | S | | C | | | M | S | 901 | 7 | II | 7.4 | 2 | 105.0 | 100.0 | 87.5 | 89.8 |
| 226 | Men's gloves | 1913–38 | M | F | F | N | | S | C | C | F | A | M | U | 905 | 4 | I | 6.3 | 2 | 100.0 | 100.0 | 83.3 | 79.2 |
| 227 | Women's gloves | 1913–38 | M | F | F | N | | S | C | C | F | A | M | U | 905 | 5 | II | 9.4 | 3 | 93.7 | 100.0 | 87.4 | 93.7 |
| 228 | Harness | 1913–38 | M | F | F | N | | S | P | O | F | A | M | D | 909 | 19 | V | 10.8 | 3 | 92.1 | 100.0 | 87.1 | 95.9 |
| 229 | Suitcases | 1913–38 | | F | F | N | | S | | O | | | M | U | 910 | 14 | IV | 23.8 | 6 | 88.4 | 100.0 | 77.3 | 102.3 |
| 230 | Traveling bags | 1913–38 | | F | F | N | | S | | O | | | M | U | 910 | 14 | IV | 24.5 | 6 | 97.4 | 100.0 | 75.3 | 99.6 |
| | IV. TEXTILES | | | | | | | | | | | | | | | | | | | | | | |
| | *Clothing* | | | | | | | | | | | | | | | | | | | | | | |
| 231 | Soft collars | 1926–38 | | F | F | N | | S | | C | | | M | D | 213 | 4 | I | 24.5 | 6 | 159.0 | 100.0 | 70.9 | 90.8 |
| 232 | Stiff collars | 1926–38 | | F | F | N | | S | | C | | | M | D | 213 | 1 | I | −3.6 | 1 | 92.8 | 100.0 | 107.2 | 107.2 |
| 233 | Men's cotton kerchiefs | 1930–38 | | F | F | N | | S | | C | | | M | S | 217 | | | | | | | | |
| 234 | Women's cotton kerchiefs | 1930–38 | | F | F | N | | S | | C | | | M | S | 217 | | | | | | | | |
| 235 | Men's linen kerchiefs | 1929–38 | | F | F | N | | S | | C | | | M | D | 217 | Discarded—Inadequate data. | | | | | | | |
| 236 | Women's linen kerchiefs | 1930–38 | | F | F | N | | S | | C | | | M | D | 217 | | | | | | | | |
| 237 | Hats, finished | 1926–36 | | F | F | N | | S | | C | | | M | U | 206 | 9 | III | | | | | | |
| 238 | Hats, unfinished | 1926–36 | | F | S | N | | S | | C | | | M | S | 206 | 11 | III | | | 1937 data lacking. | | | |
| 239 | Overalls | 1926–38 | | F | F | N | | S | | C | | | M | U | 213 | 36 | VII | 45.9 | 9 | 104.5 | 100.0 | 61.8 | 115.4 |
| 240 | Overcoats | 1926–38 | | F | F | N | | S | | C | | | M | U | 215 | 6 | II | 25.6 | 6 | 120.3 | 100.0 | 99.9 | 137.9 |
| 241 | Dress shirts | 1926–38 | | F | F | N | | S | | C | | | M | D | 213 | 2 | I | 0 | 1 | 100.0 | 100.0 | 96.7 | 93.3 |
| 242 | Work shirts | 1926–38 | | F | F | N | | S | | C | | | M | D | 213 | 16 | IV | 30.1 | 7 | 103.2 | 100.0 | 68.6 | 97.4 |
| 243 | Boys' 4-piece suits | 1926–38 | | F | F | N | | S | | C | | | M | U | 215 | 11 | III | 32.0 | 7 | 100.0 | 100.0 | 72.6 | 109.2 |
| 244 | Men's 3-piece suits | 1926–38 | | F | F | N | | S | | C | | | M | U | 215 | 10 | III | 33.2 | 8 | 117.5 | 100.0 | 77.6 | 121.5 |
| 245 | Men's 4-piece suits | 1926–38 | | F | F | N | | S | | C | | | M | U | 215 | 11 | IV–a | 38.0 | 8 | 110.5 | 100.0 | 69.1 | 111.1 |
| 246 | Youth's 4-piece suits | | | F | F | N | | S | | C | | | M | U | 215 | Discarded inadvertently. | | | | | | | |
| 247 | Topcoats | 1926–36 | | F | F | N | | S | | C | | | M | U | 215 | 9 | III | 25.0 | 6 | 121.7 | 100.0 | 77.6 | 105.1 |
| 248 | Boys' knickers | 1926–36 | | F | F | N | | S | | C | | | M | U | 215 | 17 | V | 49.4 | 10 | 117.0 | 100.0 | 59.4 | 117.7 |
| 249 | Men's dress trousers | 1926–38 | | F | F | N | | S | | C | | | M | U | 215 | 20 | V | 31.1 | 7 | 110.4 | 100.0 | 69.6 | 101.9 |
| 250 | Men's work trousers | 1926–38 | | F | F | N | | S | | C | | | M | D | 213 | 11 | III | 29.0 | 7 | 122.2 | 100.0 | 68.3 | 94.5 |
| | *Cotton goods* | | | | | | | | | | | | | | | | | | | | | | |
| 251 | Broadcloth | 1929–38 | | F | S | N | | S | | C | | | M | S | 203 | Discarded—Inadequate data. | | | | | | | |
| 252 | Damask | 1926–38 | | F | S | N | | S | | O | | | M | S | 203 | 15 | IV | 26.8 | 6 | 100.0 | 100.0 | 79.1 | 111.9 |
| 253 | Denim | 1913–38 | M | F | S | N | | S | C | O | F | C | M | S | 203 | 64 | VIII | 38.8 | 8 | 93.6 | 100.0 | 50.4 | 78.4 |
| 254 | Drill, heavy | 1926–38 | M | F | S | N | | S | C | O | F | C | M | S | 203 | Discarded—Inadequate data. | | | | | | | |
| 255 | Drill, light | 1913–38 | M | F | S | N | | S | C | O | F | C | M | S | 203 | 68 | VIII | 43.8 | 9 | 102.0 | 100.0 | 44.1 | 75.8 |
| 256 | Duck, army | 1913–38 | M | F | S | N | | S | C | O | F | C | M | S | 203 | 70 | VIII | 38.8 | 8 | 93.8 | 100.0 | 51.4 | 80.4 |
| 257 | Duck, wide | 1913–38 | M | F | S | N | | S | C | O | F | C | M | S | 203 | 82 | IX | 42.0 | 9 | 95.7 | 100.0 | 53.0 | 89.9 |
| 258 | Flannel, bleached | 1926–38 | M | F | S | N | | S | C | C | F | C | M | S | 203 | 23 | VI | 34.0 | 8 | 94.2 | 100.0 | 60.5 | 89.0 |
| 259 | Flannel, beige | 1913–38 | M | F | S | N | | S | C | C | F | C | M | S | 203 | 37 | VII | 37.1 | 8 | 90.4 | 100.0 | 51.8 | 77.8 |

TABLE I.—*Tentative price classification*—Continued

| B. L. S. code number | Name of commodity | Price data available | Fabrication | | | Durability | | | Use, N. B. E. R. | Clothing, food, and other, N. R. C. | Source | | Agriculture, manufacturing, mining, forestry, and fishing, N. R. C. | Product differentiation, unique, differentiated or standard, N. R. C. | Census industry classification | Price flexibility | | | | Price indexes | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Raw or manufactured, N. B. E. R. | Raw, semifinished or finished | | Durable, nondurable, B. L. S. | Durable, semidurable, nondurable | | | | Farm or nonfarm, N. B. E. R. | Crop, animal, forest, or mineral, N. B. E. R. | | | | Frequency of change 1926–33 N. R. C. | | Sensitivity N. R. C. | | 1929=100 | | | |
| | | | | B. L. S. | N. R. C. | | N. B. E. R. | N. R. C. | | | | | | | | Changes in 95 chances | Group number | Index of depression sensitivity | Group number | 1926 | 1929 | 1932 | 1937 |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) | (17) | (18) | (19) | (20) | (21) | (22) | (23) | (24) |
| | IV. TEXTILES—continued | | | | | | | | | | | | | | | | | | | | | | |
| | *Cotton goods*—Continued | | | | | | | | | | | | | | | | | | | | | | |
| 260 | Gingham | 1913–38 | M | F | S | N | S | S | C | C | F | C | M | S | 203 | 19 | V | 30.2 | 9 | 85.7 | 100.0 | 58.8 | 78.1 |
| 261c | Muslin | 1913–38 | M | F | S | N | S | S | C | C | F | C | M | S | 203 | 51 | VIII | 32.9 | 7 | 101.8 | 100.0 | 56.6 | 79.0 |
| 261 | Muslin No. 1, 80 x 92 | 1913–38 | M | F | S | N | S | S | C | C | F | C | M | S | 203 | | | | | | | | |
| 262 | Muslin No. 2, 80 x 80 | 1913–38 | M | F | S | N | S | S | C | C | F | C | M | S | 203 | | | | | | | | |
| 263 | Muslin No. 3, 80 x 80 | 1913–38 | M | F | S | N | S | S | C | C | F | C | M | S | 203 | | | | | | | | |
| 264 | Muslin No. 4, 96 x 100 | 1913–38 | M | F | S | N | S | S | C | C | F | C | M | S | 203 | | | | | | | | |
| 265 | Osnaburg | 1926–38 | | F | S | N | S | S | | O | | | M | S | 203 | 15 | IV | 22.4 | 5 | 97.5 | 100.0 | 67.2 | 79.3 |
| 266 | Percale | 1913–38 | M | F | S | N | S | S | C | C | F | C | M | S | 203 | 88 | IX | 47.5 | 9 | 82.1 | 100.0 | 43.5 | 82.0 |
| 267 | Print cloth, 27-inch | 1913–38 | M | S | S | N | S | S | C | C | F | C | M | S | 203 | 33 | VI | 32.6 | 7 | 95.6 | 100.0 | 58.5 | 82.2 |
| 268 | Print cloth, 38½-inch | 1926–38 | M | S | S | N | S | S | C | C | F | C | M | S | 203 | 93 | X–a | 46.0 | 9 | 99.6 | 100.0 | 50.0 | 91.9 |
| 269 | Filling sateen | 1926–38 | | F | S | N | S | S | | O | | | M | S | 203 | 95 | X–b | 45.0 | 9 | 101.3 | 100.0 | 47.2 | 84.3 |
| 270c | Sheeting, bleached | 1913–38 | M | F | S | N | S | S | C | O | F | C | M | S | 203 | 13 | IV | 26.6 | 6 | 113.0 | 100.0 | 73.2 | 99.5 |
| 270 | Sheeting, light | 1913–38 | M | F | S | N | S | S | C | O | F | C | M | S | 203 | 40 | VII | 34.5 | 8 | 98.2 | 100.0 | 54.4 | 77.8 |
| 271 | Sheeting, heavy | 1926–38 | M | F | S | N | S | S | C | O | F | C | M | S | 203 | | | | | | | | |
| 271 | Sheeting, brown | 1913–38 | M | F | S | N | S | S | C | O | F | C | M | S | 203 | | | | | | | | |
| 272 | Sheeting, heavy | 1913–38 | M | F | S | N | S | S | C | O | F | C | M | S | 203 | 64 | VIII | 43.8 | 9 | 103.1 | 100.0 | 50.0 | 87.5 |
| 273 | Sheeting, medium | 1913–38 | M | F | S | N | S | S | C | O | F | C | M | S | 203 | | | | | | | | |
| 274 | Sheeting, light | 1913–38 | M | F | S | N | S | S | C | O | F | C | M | S | 203 | | | | | | | | |
| 275 | Shirting, madras | 1926–38 | | F | S | N | S | S | | O | | | M | S | 203 | 23 | VI | 18.8 | 5 | 105.6 | 100.0 | 72.1 | 81.7 |
| 276 | Shirting, percale | 1926–38 | | F | S | N | S | S | | O | | | M | S | 203 | 57 | VIII | 35.6 | 8 | 102.8 | 100.0 | 60.3 | 91.7 |
| 277 | Ticking | 1913–38 | | F | S | N | S | S | | O | | | M | S | 203 | 38 | VII | 41.6 | 9 | 93.3 | 100.0 | 50.7 | 84.6 |
| 278 | Tire cord | 1926–38 | | S | S | N | S | S | | O | | | M | S | 203 | 90 | IX | 37.6 | 8 | 90.6 | 100.0 | 47.9 | 71.1 |
| 279 | Tire builders | 1926–38 | | S | S | N | S | S | | O | | | M | S | 203 | 86 | IX | 41.9 | 9 | 96.2 | 100.0 | 43.8 | 71.4 |
| 280 | Toweling | 1926–38 | | F | S | N | S | S | | O | | | M | S | 203 | 24 | VI | 27.6 | 7 | 122.7 | 100.0 | 72.4 | 100.0 |
| 281c | Yarn, carded | 1913–38 | M | S | S | N | S | S | M | O | F | C | M | S | 203 | 92 | IX | 43.1 | 9 | 100.4 | 100.0 | 49.1 | 84.4 |
| 281 | Yarn, 10/1, North | 1913–38 | M | S | S | N | S | S | M | O | F | C | M | S | 203 | | | | | | | | |
| 282 | Yarn, 22/1, North | 1913–38 | M | S | S | N | S | S | M | O | F | C | M | S | 203 | | | | | | | | |
| 283 | Yarn, 40's, South | 1913–38 | M | S | S | N | S | S | M | O | F | C | M | S | 203 | | | | | | | | |
| 284c | Yarn, twisted | 1913–38 | M | S | S | N | S | S | M | O | F | C | M | S | 203 | 94 | X–a | 45.8 | 9 | 98.6 | 100.0 | 47.0 | 85.6 |
| 284 | Yarn, 20/2 | 1913–38 | M | S | S | N | S | S | M | O | F | C | M | S | 203 | | | | | | | | |
| 285 | Yarn, 40/2 | 1913–38 | M | S | S | N | S | S | M | O | F | C | M | S | 203 | | | | | | | | |
| | *Knit goods* | | | | | | | | | | | | | | | | | | | | | | |
| 286 | Hose, men's cotton | 1913–38 | M | F | F | N | S | S | C | C | F | C | M | U | 207 | 24 | VI | 40.4 | 9 | 101.5 | 100.0 | 63.6 | 107.9 |
| 287 | Hose, women's, mercerized | 1913–38 | M | F | F | N | S | S | C | C | F | C | M | U | 207 | 31 | VI | 34.2 | 8 | 106.6 | 100.0 | 60.2 | 88.8 |
| 288 | Hose, women's, rayon | 1924–38 | M | F | F | N | S | S | C | C | N | O | M | U | 207 | 35 | VII | 27.7 | 7 | 122.2 | 100.0 | 47.3 | 50.0 |
| 289 | Hose, men's, silk | 1913–38 | M | F | F | N | S | S | C | C | N | A | M | U | 207 | 24 | VI | 18.1 | 5 | 124.5 | 100.0 | 59.4 | 55.0 |
| 290 | Hose, women's, silk | 1913–38 | M | F | F | N | S | S | C | C | N | A | M | D | 207 | 35 | VII | 32.0 | 7 | 120.2 | 100.0 | 47.2 | 58.5 |
| 291 | Underwear, men's cotton | 1913–38 | M | F | F | N | S | S | C | C | F | C | M | D | 207 | 27 | VI | 27.4 | 6 | 109.4 | 100.0 | 73.9 | 102.7 |
| 292 | Union suits, women's, cotton | 1913–38 | M | F | F | N | S | S | C | C | F | C | M | D | 207 | 13 | IV | 28.6 | 7 | 104.0 | 100.0 | 67.9 | 92.9 |
| 293 | Union suits, men's, wool | 1913–38 | M | F | F | N | S | S | C | C | F | A | M | D | 207 | 4 | I | 4.2 | 2 | 102.2 | 100.0 | 95.4 | 92.1 |
| 294 | Underwear, men's wool, 2 pc | 1913–38 | M | F | F | N | S | S | C | C | F | A | M | D | 207 | 12 | IV | 18.3 | 5 | 110.7 | 100.0 | 82.6 | 101.8 |
| 295c | Rayon | 1913–38 | M | S | S | N | S | S | M | C | N | F | M | S | 629 | 22 | V | 22.6 | 5 | 146.2 | 100.0 | 51.6 | 48.5 |
| 295 | Rayon, 150, 1st | 1913–38 | M | S | S | N | S | S | M | C | N | F | M | S | 629 | | | | | | | | |
| 296 | Rayon, 150, 2d | 1913–38 | M | S | S | N | S | S | M | C | N | F | M | S | 629 | | | | | | | | |
| 297 | Rayon, 300, 1st | 1913–38 | M | S | S | N | S | S | M | C | N | F | M | S | 629 | | | | | | | | |
| 298 | Rayon, 300, 2d | 1913–38 | M | S | S | N | S | S | M | C | N | F | M | S | 629 | | | | | | | | |
| 299c | Raw silk | 1913–38 | R | R | R | N | S | S | M | C | N | A | A–I | S | Import | 94 | X–a | 35.6 | 8 | 123.9 | 100.0 | 32.5 | 36.2 |
| 299 | Silk, Canton | 1913–38 | R | R | R | N | S | S | M | C | N | A | A–I | S | do | | | | | | | | |
| 300 | Silk, Japan, white | 1926–38 | R | R | R | N | S | S | M | C | N | A | A–I | S | do | | | | | | | | |
| 301 | Silk, Japan, double extra | 1913–38 | R | R | R | N | S | S | M | C | N | A | A–I | S | do | | | | | | | | |
| 302 | Silk, Japan, yellow | 1926–38 | R | R | R | N | S | S | M | C | N | A | A–I | S | do | | | | | | | | |
| 303c | Silk, yarn, domestic | 1913–38 | M | S | S | N | S | S | M | C | N | A | M | S | 209 | 35 | VII | 19.8 | 5 | 132.6 | 100.0 | 62.1 | 63.9 |
| 303 | Silk, yarn, 62/1 | 1913–38 | M | S | S | N | S | S | M | C | N | A | M | S | 209 | | | | | | | | |
| 304 | Silk yarn, 60/2 | 1913–38 | M | S | S | N | S | S | M | C | N | A | M | S | 209 | | | | | | | | |
| 305 | Silk yarn, imported | 1913–38 | M | S | S | N | S | S | M | C | N | A | M-I | S | 209 | 21 | V | 18.8 | 5 | 128.4 | 100.0 | 75.1 | 87.7 |
| 306c | Silk yarn, thrown | 1926–38 | | S | S | N | S | S | | C | | | M | S | 209 | 93 | X–a | 31.2 | 7 | 111.6 | 100.0 | 41.3 | 44.9 |
| 306 | Silk yarn, crepe | 1926–38 | | S | S | N | S | S | | C | | | M | S | 209 | | | | | | | | |
| 307 | Silk yarn, organzine | 1926–38 | | S | S | N | S | S | | C | | | M | S | 209 | | | | | | | | |
| 308 | Silk yarn, tram | 1926–38 | | S | S | N | S | S | | C | | | M | S | 209 | | | | | | | | |
| | *Woolen and worsted goods* | | | | | | | | | | | | | | | | | | | | | | |
| 309 | Wool broadcloth | 1913–38 | M | F | S | N | S | S | | C | | | M | S | 212 | 15 | IV | 28.4 | 7 | 105.5 | 100.0 | 67.5 | 91.8 |
| 310 | Wool crepe | 1923–38 | M | F | S | N | S | S | | C | | | M | S | 212 | 28 | VI | 31.8 | 7 | 96.8 | 100.0 | 61.7 | 87.0 |
| 311 | Flannel | 1913–38 | M | F | S | N | S | S | | C | | | M | S | 212 | 26 | VI | 26.2 | 6 | 113.1 | 100.0 | 69.7 | 91.7 |
| 312 | Suiting, worsted | 1926–38 | M | F | S | N | S | S | C | C | F | A | M | S | 212 | 17 | V | 44.3 | 9 | 108.9 | 100.0 | 46.0 | 80.6 |
| 313 | Serge | 1913–38 | M | F | S | N | S | S | | C | | | M | S | 212 | 26 | VI | 32.3 | 7 | 106.0 | 100.0 | 68.3 | 101.2 |
| 314 | Sicilian cloth | 1913–38 | M | F | S | N | S | S | C | C | F | O | M | S | 212 | 19 | V | 20.0 | 5 | 90.5 | 100.0 | 84.3 | 108.6 |
| 315 | Flannel, 7-ounce | 1913–38 | M | F | S | N | S | S | | C | | | M | S | 212 | 14 | IV | 17.6 | 5 | 102.2 | 100.0 | 74.9 | 84.9 |
| 316 | Overcoating, heavy | 1913–38 | M | F | S | N | S | S | C | C | F | A | M | S | 212 | 21 | V | 36.6 | 8 | 101.1 | 100.0 | 68.9 | 111.0 |
| 317 | Overcoating, top | 1923–38 | M | F | S | N | S | S | C | C | F | A | M | S | 212 | 23 | VI | 39.9 | 9 | 107.9 | 100.0 | 68.7 | 117.2 |
| 318c | Suiting, serge | 1913–38 | M | F | S | N | S | S | C | C | F | A | M | S | 212 | 32 | VI | 35.6 | 8 | 105.9 | 100.0 | 65.1 | 101.3 |
| 318 | Suiting, serge, 15-ounce | 1913–38 | M | F | S | N | S | S | C | C | F | A | M | S | 212 | | | | | | | | |
| 319 | Suiting, serge, 16-ounce | 1926–38 | M | F | S | N | S | S | C | C | F | A | M | S | 212 | | | | | | | | |
| 320 | Uniform serge, fine | 1926–38 | M | F | S | N | S | S | C | C | F | A | M | S | 212 | | | | | | | | |
| 321 | Uniform serge, medium | 1926–38 | M | F | S | N | S | S | C | C | F | A | M | S | 212 | | | | | | | | |
| 322 | Uniform serge, unfinished | 1923–38 | M | F | S | N | S | S | C | C | F | A | M | S | 212 | | | | | | | | |
| 323 | Trousering | | | F | S | N | S | S | | C | | | M | S | 212 | 30 | VI | 37.7 | 8 | 102.1 | 100.0 | 63.2 | 101.8 |
| 324 | Yarn, 2 32 stock | 1913–38 | M | S | S | N | S | S | M | O | F | A | M | S | 212 | Missing. | | | | | | | |
| 325c | Yarn, weaving | 1913–38 | M | S | S | N | S | S | M | O | F | A | M | S | 212 | 54 | VIII | 40.4 | 9 | 96.2 | 100.0 | 55.9 | 92.6 |
| 325 | Yarn, half blood | 1913–38 | M | S | S | N | S | S | M | O | F | A | M | S | 212 | 72 | VIII | 40.8 | 9 | 105.5 | 100.0 | 58.4 | 98.5 |
| 326 | Yarn, fine | 1913–38 | M | S | S | N | S | S | M | O | F | A | M | S | 212 | | | | | | | | |

Included in 261c.
Included in 270c.
Included in 272 c.
Included in 281 c.
Included in 284 c.
Included in 295 c.
Included in 299 c.
Included in 303 c.
Included in 306 c.
Included in 318 c.
Included in 325 c.

TABLE I.— *Tentative price classification*— Continued

| B. L. S. code number | Name of commodity | Price data available | Fabrication: Raw or manufactured, N. B. E. R. | Fabrication: Raw, semifinished or finished, B. L. S. | Fabrication: Raw, semifinished or finished, N. R. C. | Durability: Durable, nondurable, B. L. S. | Durability: Durable, semidurable, nondurable, N. B. E. R. | Durability: Durable, semidurable, nondurable, N. R. C. | Use, N. B. E. R. | Source: Clothing, food, and other, N. R. C. | Source: Farm or nonfarm, N. B. E. R. | Source: Crop, animal, forest, or mineral, N. B. E. R. | Source: Agriculture, manufacturing, mining, forestry, and fishing, N. R. C. | Product, differentiation, unique, differentiated or standard, N. R. C. | Census industry classification | Price flexibility: Frequency of change 1926-33, N. R. C.: Changes in 95 changes | Price flexibility: Frequency of change 1926-33, N. R. C.: Group number | Price flexibility: Sensitivity, N. R. C.: Index of depression sensitivity | Price flexibility: Sensitivity, N. R. C.: Group number | Price indexes: 1926=100: 1926 | 1929 | 1932 | 1937 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) | (17) | (18) | (19) | (20) | (21) | (22) | (23) | (24) |
| | IV. TEXTILES—continued | | | | | | | | | | | | | | | | | | | | | | |
| | *Other textile products* | | | | | | | | | | | | | | | | | | | | | | |
| 327 | Burlap | 1913-38 | M | F | S | N | .. | S | M | O | N | C | M | S | 202 | 93 | X-a | 30.8 | 7 | 107.2 | 100.0 | 50.8 | 63.3 |
| 328 | Hemp | 1913-38 | R | R | RS | N | .. | S | P | O | N | C | M | S | Import | 92 | IX | 61.2 | 10 | 131.4 | 100.0 | 35.1 | 92.5 |
| 329 | Jute | 1913-38 | | R | R | N | .. | S | | O | | | A-I | S | do | 83 | IX | 40.6 | 9 | 124.2 | 100.0 | 41.6 | 64.5 |
| 330 | Artificial leather, heavy | 1926-38 | .. | S | S | N | N | S | | O | | | M | S | 220 | 15 | IV | 4.2 | 2 | 98.1 | 100.0 | 84.8 | 78.0 |
| 331 | Artificial leather, light | 1926-38 | .. | S | S | N | N | S | | O | | | M | S | 220 | 14 | IV | 6.8 | 2 | 98.1 | 100.0 | 82.4 | 78.5 |
| 332 | Cotton rope | 1926-38 | .. | F | F | N | N | S | | O | | | M | S | 203 | 56 | VIII | 35.2 | 8 | 110.4 | 100.0 | 54.6 | 79.6 |
| 333 | Manila rope | 1926-38 | .. | F | SF | N | N | S | | O | | | M | S | 202 | 19 | V | 21.6 | 5 | 110.9 | 100.0 | 70.0 | 83.3 |
| 334 | Sisal rope | 1926-38 | .. | F | SF | N | N | S | | O | | | M | S | 202 | 15 | IV | 20.8 | 5 | 108.9 | 100.0 | 68.5 | 78.5 |
| 335 | Sisal | 1913-38 | .. | R | RS | N | .. | S | | O | | | A-I | S | Import | 45 | VII | 57.2 | 10 | 120.5 | 100.0 | 30.7 | 75.7 |
| 336 | Cotton thread | 1913-38 | M | F | S | N | N | S | M | O | F | C | M | S | 203 | 5 | II | −18.2 | 1 | 100.0 | 100.0 | 95.9 | 55.3 |
| 337 | Linen thread | 1913-38 | .. | F | S | N | N | S | | O | | | M | S | 202 | 6 | II | 9.8 | 3 | 99.7 | 100.0 | 90.4 | 100.4 |
| 338 | Binder twine | 1913-38 | M | F | SF | N | N | S | M | O | N | C | M | S | 202 | 14 | IV | 28.5 | 7 | 122.9 | 100.0 | 59.2 | 75.4 |
| 339 | Cotton twine | 1926-38 | .. | F | F | N | N | S | | O | | | M | S | 203 | 81 | IX | 45.0 | 9 | 88.7 | 100.0 | 44.5 | 79.1 |
| 340 | Hard fiber twine | 1926-38 | .. | F | SF | N | N | S | | O | | | M | S | 202 | 20 | V | 40.2 | 9 | 112.1 | 100.0 | 51.3 | 83.0 |
| 341c | Jute yarn | 1926-38 | .. | S | S | N | N | S | | O | .. | .. | M | S | 202 | 18 | V | 22.5 | 5 | 121.4 | 100.0 | 68.7 | 82.4 |
| 341 | Jute yarn No. 1 | 1926-38 | .. | S | S | N | N | S | | O | .. | .. | M | S | 202 | Included in 341c. | | | | | | | |
| 342 | Jute yarn No. 2 | 1926-38 | .. | S | S | N | N | S | | O | .. | .. | M | S | 202 | Included in 341c. | | | | | | | |
| | V. FUEL AND LIGHTING | | | | | | | | | | | | | | | | | | | | | | |
| | *Anthracite* | | | | | | | | | | | | | | | | | | | | | | |
| 343 | Anthracite, chestnut | 1923-38 | R | R | RF | .. | N | N | C | O | N | M | Mi | S | Mining | 38 | VII | −3.9 | 1 | 106.8 | 100.0 | 94.6 | 81.4 |
| 344 | Anthracite, egg | 1923-38 | R | R | RF | .. | N | N | C | O | N | M | Mi | S | do | 39 | VII | −2.0 | 1 | 105.6 | 100.0 | 92.7 | 81.5 |
| 345 | Anthracite, pea | 1923-38 | R | R | RF | .. | N | N | C | O | N | M | Mi | S | do | 38 | VII | −8.8 | 1 | 116.0 | 100.0 | 108.4 | 99.3 |
| | *Bituminous* | | | | | | | | | | | | | | | | | | | | | | |
| 346 | Soft coal, mine run | 1923-38 | R | R | R | .. | N | N | M | O | N | M | Mi | S | do | 24 | VI | 12.3 | 3 | 109.2 | 100.0 | 92.0 | 108.6 |
| 347 | Soft coal, sizes | 1923-38 | R | R | RF | .. | N | N | M | O | N | M | Mi | S | do | 49 | VII | 17.6 | 5 | 109.4 | 100.0 | 83.9 | 103.0 |
| 348 | Soft coal, screening | 1923-38 | R | R | R | .. | N | N | M | O | N | M | Mi | S | do | 35 | VII | 13.6 | 4 | 111.2 | 100.0 | 94.1 | 115.5 |
| | *Coke* | | | | | | | | | | | | | | | | | | | | | | |
| 349 | Beehive coke | 1913-38 | M | F | S | .. | N | N | P | O | N | M | Mi | S | 701 | 74 | VIII | 52.5 | 10 | 147.7 | 100.0 | 76.4 | 157.8 |
| 350c | Retort coke | 1913-38 | M | F | S | .. | N | N | P | O | N | M | Mi | S | 701 | 21 | VI | 23.7 | 6 | 118.2 | 100.0 | 90.8 | 129.0 |
| 350 | Retort coke, Alabama | 1922-38 | M | F | S | .. | N | N | P | O | N | M | Mi | S | 701 | Included in 350c. | | | | | | | |
| 351 | Retort coke, New Jersey | 1913-38 | M | F | S | .. | N | N | P | O | N | M | Mi | S | 701 | Included in 350c. | | | | | | | |
| 352 | Retort coke, Chicago | 1922-38 | M | F | S | .. | N | N | P | O | N | M | Mi | S | 701 | Included in 350c. | | | | | | | |
| | *Electricity* | | | | | | | | | | | | | | | | | | | | | | |
| 353 | Electricity | 1926-38 | .. | F | S | .. | .. | N | .. | O | .. | .. | .. | S | Service | Discarded—Data is average realization, not price. | | | | | | | |
| | *Gas* | | | | | | | | | | | | | | | | | | | | | | |
| 354 | Gas | 1929-38 | M | F | SF | .. | N | N | C | O | N | M | .. | S | 703 | Discarded—Data is average realization, not price. | | | | | | | |
| | *Petroleum products* | | | | | | | | | | | | | | | | | | | | | | |
| 355 | Fuel oil, Oklahoma | 1913-38 | M | F | SF | .. | .. | N | M | O | N | M | Mi | S | 705 | 89 | IX | 52.6 | 10 | 177.0 | 100.3 | 58.2 | 121.6 |
| 356 | Fuel oil, Pennsylvania | 1913-38 | M | F | SF | .. | .. | N | M | O | N | M | Mi | S | 705 | 89 | IX | 30.2 | 7 | 134.0 | 100.0 | 65.8 | 92.0 |
| 357 | Gasoline, natural, Oklahoma | 1921-38 | R | F | SF | .. | N | N | M | O | N | M | Mi | D | 705 | 94 | X-a | 44.2 | 9 | 140.1 | 100.0 | 31.7 | 57.7 |
| 358 | Gasoline, California | 1925-38 | M | F | SF | .. | .. | N | C | O | N | M | Mi | D | 705 | 87 | IX | 31.7 | 7 | 151.5 | 100.0 | 72.9 | 109.2 |
| 359c | Gasoline, Eastern | 1913-38 | M | F | SF | .. | .. | N | C | O | N | M | Mi | D | 705 | 91 | X-a | 24.8 | 6 | 139.1 | 100.0 | 61.2 | 72.0 |
| 359 | Gasoline, Northern Texas | 1913-38 | M | F | SF | .. | .. | N | C | O | N | M | Mi | D | 705 | Included in 359c. | | | | | | | |
| 360 | Gasoline, Oklahoma | 1913-38 | M | F | SF | .. | .. | N | C | O | N | M | Mi | D | 705 | Included in 359c. | | | | | | | |
| 361 | Gasoline, Pennsylvania | 1913-38 | M | F | SF | .. | .. | N | C | O | N | M | Mi | D | 705 | Included in 359c. | | | | | | | |
| 362 | Kerosene, Standard | 1913-38 | M | F | SF | .. | .. | N | C | O | N | M | Mi | S | 705 | 43 | VII | 16.5 | 4 | 110.3 | 100.0 | 70.7 | 74.4 |
| 363 | Kerosene, white | 1913-38 | M | F | SF | .. | .. | N | C | O | N | M | Mi | S | 705 | 86 | IX | 20.8 | 5 | 141.2 | 100.0 | 65.0 | 71.6 |
| 364 | Petroleum, California | 1913-38 | R | R | RS | .. | N | N | M | O | N | M | Mi | S | 705 | 19 | V | 19.5 | 5 | 127.6 | 100.0 | 78.4 | 95.8 |
| 365 | Petroleum, Kansas | 1913-38 | R | R | RS | .. | N | N | M | O | N | M | Mi | S | 705 | 45 | VII | 31.2 | 7 | 152.9 | 100.0 | 65.7 | 93.9 |
| 366 | Petroleum, Pennsylvania | 1913-38 | R | R | RS | .. | N | N | M | O | N | M | Mi | S | 705 | 60 | VIII | 33.3 | 8 | 95.6 | 100.0 | 49.7 | 66.0 |
| | VI. METALS AND METAL PRODUCTS | | | | | | | | | | | | | | | | | | | | | | |
| | *Agricultural implements* | | | | | | | | | | | | | | | | | | | | | | |
| 367 | Grain binder | 1913-37[2] | .. | F | F | D | .. | D | .. | O | .. | .. | M | U | 1301 | 2 | I | 7.8 | 3 | 100.8 | 100.0 | 94.7 | 105.0 |
| 368 | Cultivator | 1913-37[2] | .. | F | F | D | .. | D | .. | O | .. | .. | M | U | 1301 | 3 | I | 12.2 | 3 | 108.1 | 100.0 | 96.4 | 117.3 |
| 369 | Grain drill | 1913-37[2] | .. | F | F | D | .. | D | .. | O | .. | .. | M | U | 1301 | 1 | I | 11.8 | 3 | 101.0 | 100.0 | 100.0 | 123.6 |
| 370 | Engine, 3 horsepower | 1913-37[2] | .. | F | F | D | .. | D | .. | O | .. | .. | M | U | 1301 | 1 | I | 4.8 | 2 | 101.6 | 100.0 | 95.3 | 100.3 |
| 371 | Hay forks | 1926-38 | .. | F | F | D | .. | D | .. | O | .. | .. | M | D | 1125 | 4 | I | 11.2 | 3 | 100.0 | 100.0 | 90.4 | 103.3 |
| 372 | Disk harrow | 1926-37[2] | .. | F | F | D | .. | D | .. | O | .. | .. | M | U | 1301 | 3 | I | 12.0 | 3 | 104.2 | 100.0 | 92.7 | 109.3 |
| 373 | Pegtooth harrow | 1913-37[2] | .. | F | F | D | .. | D | .. | O | .. | .. | M | U | 1301 | 4 | I | 17.2 | 4 | 112.7 | 100.0 | 90.3 | 115.1 |
| 374 | Spring-tooth harrow | 1913-37[2] | .. | F | F | D | .. | D | .. | O | .. | .. | M | U | 1301 | 5 | II | 17.2 | 4 | 128.4 | 100.0 | 91.3 | 116.9 |
| 375 | Harvester, thresher | 1926-37[2] | .. | F | F | D | .. | D | .. | O | .. | .. | M | U | 1301 | 1 | I | −2.4 | 1 | 100.7 | 100.0 | 98.1 | 91.5 |
| 376 | Hoes | 1926-38 | .. | F | F | D | .. | D | .. | O | .. | .. | M | D | 1125 | 4 | I | 8.6 | 3 | 100.0 | 100.0 | 92.0 | 101.2 |
| 377 | Hay loader | 1913-37[2] | .. | F | F | D | .. | D | .. | O | .. | .. | M | U | 1301 | 3 | I | 10.9 | 3 | 101.9 | 100.0 | 94.3 | 110.4 |
| 378 | Hay mower | 1913-37[2] | .. | F | F | D | .. | D | .. | O | .. | .. | M | U | 1301 | 2 | I | 13.0 | 4 | 100.8 | 100.0 | 95.6 | 117.3 |
| 379 | Corn picker | 1913-37[2] | .. | F | F | D | .. | D | .. | O | .. | .. | M | U | 1301 | 4 | I | −7.8 | 1 | 116.6 | 100.0 | 96.3 | 77.0 |
| 380 | Corn planter | 1913-37[2] | .. | F | F | D | .. | D | .. | O | .. | .. | M | U | 1301 | 0 | I | 6.0 | 2 | 100.0 | 100.0 | 100.0 | 112.1 |

TABLE I.—*Tentative price classification*—Continued

| B. L. S. code number | Name of commodity | Price data available | Fabrication | | | Durability | | | Use, N. B. E. R.[1] | Clothing, food, and other, N. R. C. | Source | | Agriculture, manufacturing, mining, forestry, and fishing, N. R. C. | Product differentiation, unique, differentiated or standard, N. R. C. | Census industry classification | Price flexibility | | | | Price indexes | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Raw or manufactured, N. B. E. R. | Raw, semifinished or finished | | Durable, nondurable, B. L. S. | Durable, semidurable, nondurable | | | | Farm or nonfarm, N. B. E. R. | Crop, animal, forest, or mineral, N. B. E. R. | | | | Frequency of change 1926–33 N. R. C. | | Sensitivity N. R. C. | | 1929=100 | | | |
| | | | | B. L. S. | N. R. C. | | N. B. E. R. | N. R. C. | | | | | | | | Changes in 95 changes | Group number | Index of depression sensitivity | Group number | 1926 | 1929 | 1932 | 1937 |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) | (17) | (18) | (19) | (20) | (21) | (22) | (23) | (24) |
| | VI. METALS AND METAL PRODUCTS—continued | | | | | | | | | | | | | | | | | | | | | | |
| | *Agricultural implements*—Con. | | | | | | | | | | | | | | | | | | | | | | |
| 381 | Tractor plow | 1913–37[2] | | F | F | D | | D | | O | | | M | U | 1301 | 0 | I | 8.4 | 3 | 100.0 | 100.0 | 100.0 | 116.9 |
| 382 | 1-horse plow | 1913–37[2] | | F | F | D | | D | | O | | | M | U | 1301 | 6 | II | 21.7 | 5 | 101.6 | 100.0 | 88.3 | 120.0 |
| 383 | 2-horse plow | 1913–37[2] | | F | F | D | | D | | O | | | M | U | 1301 | 5 | II | 13.3 | 4 | 105.5 | 100.0 | 83.9 | 94.4 |
| 384 | Pump | 1926–38 | | F | F | D | | D | | O | | | M | D | 1309 | 5 | II | 20.4 | 5 | 110.4 | 100.0 | 78.6 | 98.1 |
| 385 | Hand rake | 1926–38 | | F | F | D | | D | | O | | | M | D | 1125 | 4 | I | 9.4 | 3 | 100.0 | 100.0 | 90.8 | 100.3 |
| 386 | Self-dump rake | 1913–37[2] | | F | F | D | | D | | O | | | M | U | 1301 | 1 | I | 10.3 | 3 | 105.5 | 100.0 | 100.0 | 120.6 |
| 387 | Side delivery rake | 1913–37[2] | | F | F | D | | D | | O | | | M | U | 1301 | 4 | I | 14.0 | 4 | 102.0 | 100.0 | 94.8 | 117.6 |
| 388 | Cream separator | 1913–37[2] | | F | F | D | | D | | O | | | M | U | 1305 | 5 | II | 9.7 | 3 | 98.4 | 100.0 | 91.9 | 103.7 |
| 389 | Corn sheller | 1913–37 | | F | F | D | | D | | O | | | M | U | 1301 | 0 | I | 17.8 | 5 | 100.0 | 100.0 | 100.0 | 135.7 |
| 390 | Shovels | 1913–38 | M | F | F | D | | D | P | O | N | M | M | D | 1125 | 5 | II | 9.7 | 3 | 93.9 | 100.0 | 91.7 | 102.8 |
| 391 | Spades | 1926–38 | | F | F | D | | D | | O | | | M | D | 1125 | 3 | I | 8.0 | 3 | 100.0 | 100.0 | 115.0 | 145.9 |
| 392 | Manure spreader | 1913–37 | | F | F | D | | D | | O | | | M | U | 1301 | 2 | I | 11.2 | 3 | 100.0 | 100.0 | 93.4 | 109.2 |
| 393 | Grain thresher | 1926–37[2] | | F | F | D | | D | | O | | | M | U | 1301 | 2 | I | 7.0 | 2 | 107.4 | 100.0 | 95.3 | 104.6 |
| 394 | Tractor, 10–20 horsepower | 1913–37[2] | | F | F | D | | D | | O | | | M | U | 1301 | 2 | I | 14.2 | 4 | 100.0 | 100.0 | 88.6 | 105.5 |
| 395 | Tractor, 15–30 horsepower | 1926–37[2] | | F | F | D | | D | | O | | | M | U | 1301 | 5 | II | 15.7 | 4 | 100.0 | 100.0 | 74.2 | 79.8 |
| 396 | Wagon, 2-horse | 1913–37[2] | | F | F | D | | D | | O | | | M | U | 1404 | 6 | II | 13.0 | 4 | 100.0 | 100.0 | 86.7 | 99.4 |
| 397 | Windmill | 1926–38 | | F | F | D | | D | | O | | | M | U | 1304 | 6 | II | 13.0 | 4 | 104.4 | 100.0 | 91.1 | 108.1 |
| | *Iron and steel* | | | | | | | | | | | | | | | | | | | | | | |
| 398 | Angle bars | 1914–38 | M | F | S | D | | D | P | O | N | M | M | S | 1112 | 2 | I | 1.4 | 2 | 100.0 | 100.0 | 99.0 | 100.7 |
| 399 | Augers | 1913–38 | M | F | F | D | | D | P | O | N | M | M | D | 1103 | 0 | I | 0 | 1 | 100.0 | 100.0 | 100.0 | 100.0 |
| 400 | Axes | 1926–38 | M | F | F | D | | D | P | O | N | M | M | D | 1103 | 6 | II | 16.9 | 4 | 100.0 | 100.0 | 80.9 | 95.6 |
| 401 | Bar iron, Chicago | 1925–38 | M | S | S | D | | D | P | O | N | M | M | S | 1112 | 28 | VI | 26.4 | 6 | 98.5 | 100.0 | 81.3 | 115.3 |
| 402 | Bar iron, Pittsburgh | 1913–38 | M | S | S | D | | D | P | O | N | M | M | S | 1112 | 4 | I | .6 | 2 | 109.1 | 100.0 | 100.0 | 101.1 |
| 403 | Reinforcing bars | 1913–38 | M | F | S | D | | D | P | O | N | M | M | S | 1112 | 39 | VII | 33.2 | 8 | 98.5 | 100.0 | 77.0 | 120.3 |
| 404 | Merchant bars | 1913–38 | M | S | S | D | | D | P | O | N | M | M | S | 1112 | 38 | VII | 30.6 | 7 | 103.7 | 100.0 | 82.0 | 125.1 |
| 405 | Steel sheet bars | 1913–38 | | S | S | D | | D | | O | | | M | S | 1112 | 29 | VI | 27.5 | 7 | 102.9 | 100.0 | 74.6 | 104.2 |
| 406 | Cold finished bars | 1919–38 | | S | S | D | | D | | O | | | M | S | 1112 | 36 | VII | 32.8 | 7 | 108.3 | 100.0 | 79.7 | 125.0 |
| 407 | Steel barrels | 1926–38 | | F | F | D | | D | | O | | | M | S | 1120 | 9 | III | 25.6 | 6 | 100.0 | 100.0 | 77.8 | 106.7 |
| 408 | Steel billets | 1913–38 | M | S | S | D | D | D | P | O | N | M | M | S | 1112 | 28 | VI | 26.0 | 6 | 101.0 | 100.0 | 76.6 | 105.3 |
| 409 | Boiler tubes | 1926–38 | | F | S | D | | D | | O | | | M | S | 1119 | 8 | III | 1.4 | 2 | 96.4 | 100.0 | 102.3 | 107.4 |
| 410 | Machine bolts | 1926–38 | | F | S | D | | D | | O | | | M | S | 1101 | 13 | IV | 22.6 | 5 | 89.0 | 100.0 | 81.8 | 108.9 |
| 411 | Plow bolts | 1925–38 | M | F | S | D | | D | P | O | N | M | M | S | 1101 | 17 | V | 26.2 | 6 | 92.4 | 100.0 | 70.0 | 92.3 |
| 412 | Stove bolts | 1926–38 | | F | S | D | | D | | O | | | M | S | 1101 | 17 | V | 25.7 | 6 | 100.5 | 100.0 | 82.4 | 116.2 |
| 413 | Track bolts | 1914–38 | | F | S | D | | D | | O | | | M | S | 1101 | 15 | IV | 15.2 | 4 | 108.1 | 100.0 | 89.7 | 109.9 |
| 414 | Butts (hinges) | 1913–38 | M | F | S | D | | D | P | O | N | M | M | S | 1109 | 29 | VI | 18.2 | 5 | 103.2 | 100.0 | 88.1 | 112.7 |
| 415 | Garbage cans | 1913–38 | | F | F | D | | D | | O | | | M | S | 1123 | 6 | II | 2.0 | 2 | 101.7 | 100.0 | 91.9 | 87.8 |
| 416 | Malleable castings | 1926–38 | | S | S | D | D | D | | O | | | M | S | 1322 | 24 | VI | 14.0 | 4 | 121.2 | 100.0 | 77.6 | 83.2 |
| 417 | Chisels | 1913–38 | M | F | F | D | | D | P | O | N | M | M | D | 1103 | 2 | I | 1.8 | 2 | 100.0 | 100.0 | 100.0 | 103.6 |
| 418 | Files | 1913–38 | M | F | F | D | | D | P | O | N | M | M | D | 1105 | 1 | I | .5 | 2 | 100.0 | 100.0 | 100.0 | 101.0 |
| 419 | Hammers | 1926–38 | M | F | F | D | | D | P | O | N | M | M | D | 1125 | 7 | II | 23.6 | 6 | 100.0 | 100.0 | 70.2 | 87.7 |
| 420 | Hatchets | 1926–38 | | F | F | D | | D | | O | | | M | D | 1103 | 7 | II | 19.3 | 5 | 100.0 | 100.0 | 81.9 | 102.4 |
| 421 | Corn knives | 1926–38 | | F | F | D | | D | | O | | | M | D | 1103 | 3 | I | 9.4 | 3 | 100.0 | 100.0 | 99.7 | 118.1 |
| 422 | Door knobs | 1913–38 | M | F | S | D | | D | P | O | N | M | M | S | 1109 | 16 | IV | 23.8 | 6 | 91.9 | 100.0 | 59.2 | 65.9 |
| 423 | Mortise locks | 1913–38 | M | F | S | D | | D | P | O | N | M | M | S | 1109 | 19 | V | 11.2 | 3 | 87.3 | 100.0 | 74.5 | 71.4 |
| 424 | Wire nails | 1913–38 | M | F | S | D | | D | P | O | N | M | M | S | 1113 | 41 | VII | 25.2 | 6 | 103.1 | 100.0 | 76.8 | 103.9 |
| 425c | Mesabi ore | 1913–38 | R | R | R | D | D | D | P | O | N | M | Mi | S | Mining | 2 | I | 3.5 | 2 | 95.8 | 100.0 | 101.3 | 109.6 |
| 425 | Bessemer ore | 1913–38 | R | R | R | | D | D | P | O | N | M | Mi | S | ——do—— | Included in 425c. | | | | | | | |
| 426 | Non-Bessemer ore | 1913–38 | R | R | R | | D | D | P | O | N | M | Mi | S | ——do—— | Included in 425c. | | | | | | | |
| 427c | Pig iron | 1913–38 | R | S | S | | D | D | P | O | N | M | Mi | S | 1110 | 48 | VII | 31.4 | 7 | 102.5 | 100.0 | 80.8 | 124.4 |
| 427 | Pig iron, basic | 1913–38 | R | S | S | | D | D | P | O | N | M | Mi | S | 1110 | Included in 427c. | | | | | | | |
| 428 | Pig iron, Bessemer | 1913–38 | R | S | S | D | D | D | P | O | N | M | Mi | S | 1110 | 20 | V | 28.5 | 7 | 90.7 | 100.0 | 67.9 | 92.8 |
| 429 | Ferromanganese | 1913–38 | R | S | S | D | | D | P | O | N | M | Mi | S | 1110 | Included in 427c. | | | | | | | |
| 430 | Foundry iron, Pittsburgh | 1913–38 | R | S | S | D | D | D | P | O | N | M | Mi | S | 1110 | Included in 427c. | | | | | | | |
| 431 | Foundry iron, Birmingham | 1913–38 | R | S | S | D | D | D | P | O | N | M | Mi | S | 1110 | 35 | VII | 41.6 | 9 | 139.9 | 100.0 | 73.0 | 129.1 |
| 432 | Malleable iron | 1913–38 | R | S | S | D | D | D | P | O | N | M | Mi | S | 1110 | Included in 427c. | | | | | | | |
| 433 | Spiegeleisen | 1913–38 | R | S | S | D | | D | P | O | N | M | Mi | S | 1110 | 29 | VI | 19.2 | 5 | 104.0 | 100.0 | 78.8 | 96.0 |
| 434 | Cast iron pipe | 1913–38 | M | F | S | D | D | D | P | O | N | M | M | S | 1102 | 62 | VIII | 50.7 | 10 | 140.1 | 100.0 | 70.3 | 142.0 |
| 435 | Black steel pipe | 1913–38 | M | F | S | D | D | D | P | O | N | M | M | S | 1128 | 9 | III | 4.2 | 2 | 100.0 | 100.0 | 92.7 | 93.9 |
| 436 | Galvanized pipe | 1913–38 | M | F | S | D | D | D | P | O | N | M | M | S | 1128 | 9 | III | 2.0 | 2 | 100.0 | 100.0 | 94.0 | 92.0 |
| 437 | Planes, jack | 1913–38 | M | F | F | D | | D | P | O | N | M | M | D | 1103 | 7 | II | 26.1 | 6 | 100.0 | 100.0 | 69.2 | 90.6 |
| 438 | Steel plates | 1913–38 | M | F | S | D | | D | P | O | N | M | M | S | 1112 | 40 | VII | 25.7 | 6 | 97.4 | 100.0 | 81.8 | 115.0 |
| 439 | Steel rails | 1913–38 | M | F | S | D | | D | P | O | N | M | M | S | 1112 | 4 | I | .1 | 1 | 100.0 | 100.0 | 98.6 | 97.4 |
| 440 | Rivets, large | 1926–38 | | F | S | D | | D | | O | | | M | S | 1101 | 30 | VI | 34.4 | 8 | 83.1 | 100.6 | 73.3 | 115.4 |
| 441 | Rivets, small | 1926–38 | | F | S | D | | D | | O | | | M | S | 1101 | 15 | IV | 14.0 | 4 | 99.3 | 100.0 | 94.9 | 117.8 |
| 442 | Wire rods | 1913–38 | | S | S | D | | D | | O | | | M | S | 1112 | 24 | VI | 16.6 | 4 | 108.5 | 100.0 | 89.2 | 111.6 |
| 443 | Crosscut saws | 1913–38 | M | F | F | D | | D | P | O | N | M | M | D | 1116 | 7 | II | 3.0 | 2 | 101.2 | 100.0 | 96.0 | 98.0 |
| 444 | Hand saws | 1913–38 | M | F | F | D | | D | P | O | N | M | M | D | 1116 | 5 | II | 6.0 | 2 | 100.0 | 100.0 | 93.6 | 99.3 |
| 445 | Steel scrap | 1913–38 | R | R | R | | | D | P | O | N | M | M | S | ——— | 85 | IX | 66.0 | 10 | 91.2 | 100.0 | 42.2 | 116.5 |
| 446 | Annealed sheets | 1913–38 | M | F | S | D | | D | P | O | N | M | M | S | 1112 | 70 | VIII | 25.9 | 6 | 106.0 | 100.0 | 78.3 | 108.4 |
| 447 | Auto body sheets | 1915–38 | M | F | S | D | | D | P | O | N | M | M | S | 1112 | 57 | VIII | 24.0 | 6 | 104.7 | 100.0 | 69.1 | 86.1 |
| 448 | Galvanized sheets | 1913–38 | | F | S | D | | D | | O | | | M | S | 1112 | 64 | VIII | 22.7 | 5 | 110.4 | 100.0 | 79.4 | 104.2 |
| 449 | Skelp | 1913–38 | M | S | S | D | | D | P | O | N | M | M | S | 1112 | 18 | V | 20.7 | 5 | 102.2 | 100.0 | 84.4 | 110.2 |
| 450 | Track spikes | 1926–38 | | F | S | D | | D | | O | | | M | S | 1113 | 17 | V | 14.4 | 4 | 104.2 | 100.0 | 91.0 | 110.9 |
| 451 | Cold rolled steel | 1913–38 | | S | S | D | | D | | O | | | M | S | 1112 | 61 | VIII | 35.6 | 8 | 130.4 | 100.0 | 70.4 | 112.1 |
| 452 | Structural steel | 1913–38 | M | F | S | D | | D | P | O | N | M | M | S | 1112 | 32 | VI | 25.2 | 6 | 108.5 | 100.0 | 89.2 | 111.6 |
| 453 | Terneplate | 1913–38 | M | F | S | D | | D | P | O | N | M | M | S | 1112 | 13 | IV | 15.0 | 4 | 105.0 | 100.0 | 85.3 | 100.6 |
| 454 | Tie plates | 1916–38 | M | F | S | D | | D | P | O | N | M | M | S | 1112 | 18 | V | 17.4 | 4 | 107.5 | 100.0 | 85.3 | 105.4 |
| 455 | Tin plate | 1913–38 | M | F | S | D | | D | P | O | N | M | M | S | 1112 | 10 | III | 14.6 | 4 | 102.8 | 100.0 | 88.1 | 105.5 |
| 456 | Vises | 1913–38 | M | F | F | D | | D | P | O | N | M | M | D | 1125 | 2 | I | 3.0 | 2 | 109.9 | 100.0 | 100.0 | 105.9 |
| 457c | Wire | 1913–38 | M | F | S | D | | D | P | O | N | M | M | S | 1127 | 35 | VII | 17.0 | 4 | 100.9 | 100.0 | 86.4 | 106.8 |

TABLE I.—*Tentative price classification*—Continued

| B. L. S. code number | Name of commodity | Price data available | Fabrication: Raw or manufactured, N. B. E. R. | Fabrication: Raw, semifinished or finished, B. L. S. | Fabrication: Raw, semifinished or finished, N. B. E. R. | Durability: Durable, nondurable, B. L. S. | Durability: Durable, semidurable, nondurable, N. B. E. R. | Durability: Durable, semidurable, nondurable, N. R. C. | Source: Use, N. B. E. R. | Source: Clothing, food, and other, N. B. E. R. | Source: Farm or nonfarm, N. B. E. R. | Source: Crop, animal, forest, or mineral, N. B. E. R. | Source: Agriculture, manufacturing, mining, forestry, and fishing, N. R. C. | Product differentiation, unique, differentiated or standard, N. R. C. | Census industry classification | Price flexibility: Frequency of change 1926–33, N. R. C.: Changes in 95 changes | Price flexibility: Frequency of change 1926–33, N. R. C.: Group number | Price flexibility: Sensitivity, N. R. C.: Index of depression sensitivity | Price flexibility: Sensitivity, N. R. C.: Group number | Price indexes: 1926=100: 1926 | Price indexes: 1929 | Price indexes: 1932 | Price indexes: 1937 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) | (17) | (18) | (19) | (20) | (21) | (22) | (23) | (24) |
| | VI. METALS AND METAL PRODUCTS—continued | | | | | | | | | | | | | | | | | | | | | | |
| | *Iron and steel*—Continued | | | | | | | | | | | | | | | | | | | | | | |
| 457 | Annealed wire | 1913–38 | M | F | S | D | | D | P | O | N | M | M | S | 1127 | | | | | | | | |
| 458 | Barbed galvanized wire | 1913–38 | M | F | F | D | | D | P | O | N | M | M | S | 1127 | | | | | | | | |
| 459 | Galvanized wire | 1913–38 | M | F | F | D | | D | P | O | N | M | M | S | 1127 | | | | | | | | |
| 460 | Woven fence wire | 1913–38 | M | F | F | D | | D | P | O | N | M | M | S | 1127 | | | | | | | | |
| 461 | Wood screws | 1913–38 | M | F | S | D | | D | P | O | N | M | M | S | 1117 | | | | | | | | |
| | *Motor vehicles* | | | | | | | | | | | | | | | | | | | | | | |
| 462c | Passenger cars | 1923–38 | | F | F | D | P | D | | O | | | M | U | 1408 | | | | | | | | |
| 462 | Buick | 1923–38 | | F | F | D | D | D | | O | | | M | U | 1408 | | | | | | | | |
| 463 | Cadillac | 1923–38 | | F | F | D | D | D | | O | | | M | U | 1408 | | | | | | | | |
| 464 | Chevrolet | 1923–38 | | F | F | D | D | D | | O | | | M | U | 1408 | | | | | | | | |
| 465 | Dodge | 1923–38 | | F | F | D | D | D | | O | | | M | U | 1408 | | | | | | | | |
| 466 | Ford | 1923–38 | | F | F | D | D | D | | O | | | M | U | 1408 | | | | | | | | |
| 467 | Packard | 1923–38 | | F | F | D | D | D | | O | | | M | U | 1408 | | | | | | | | |
| 468 | Trucks | 1926–38 | | F | F | D | D | D | | O | | | M | U | 1408 | | | | | | | | |
| | *Nonferrous metals* | | | | | | | | | | | | | | | | | | | | | | |
| 469 | Aluminum | 1913–38 | R | S | R | D | | D | P | O | N | M | M1 | S | 608 | 13 | IV | −3.8 | 1 | 112.9 | 100.0 | 95.8 | 83.9 |
| 470 | Antimony | 1913–38 | R | S | R | D | | D | P | O | N | M | M1 | S | 608 | 94 | X-a | 73.9 | 10 | 178.3 | 100.0 | 62.9 | 173.6 |
| 471 | Babbitt metal | 1926–38 | | F | S | D | D | D | | O | | | M | S | 1212 | 17 | V | 42.9 | 9 | 160.4 | 100.0 | 74.2 | 134.2 |
| 472 | Copper, electrolytic | 1913–38 | R | S | S | D | D | D | P | O | N | M | M1 | S | 1215 | 80 | IX | 55.6 | 10 | 76.3 | 100.0 | 30.8 | 72.8 |
| 473 | Lead, soft | 1913–38 | R | S | S | D | D | D | P | O | N | M | M1 | S | 1216 | 82 | IX | 47.4 | 9 | 123.6 | 100.0 | 46.7 | 88.3 |
| 474 | Nickel, cathode | 1926–38 | R | S | S | D | | D | P | O | N | M | M1-I | S | Import | 2 | I | 0 | 1 | 111.5 | 100.0 | 100.0 | 100.0 |
| 475 | Lead pipe | 1913–38 | M | F | S | D | D | D | P | O | N | M | M | S | 1212 | 70 | VIII | 35.4 | 8 | 119.8 | 100.0 | 63.0 | 96.9 |
| 476 | Mercury | 1913–38 | R | S | R | D | | D | P | O | N | M | M1 | S | Mining | 83 | IX | 37.4 | 8 | 74.7 | 100.0 | 58.2 | 91.3 |
| 477 | Brass rods | 1925–38 | | S | S | D | D | D | | O | | | M | S | 1212 | 67 | VIII | 39.3 | 8 | 79.1 | 100.0 | 48.1 | 74.8 |
| 478 | Copper rods | 1925–38 | | S | S | D | D | D | | O | | | M | S | 1212 | 72 | VIII | 37.4 | 8 | 84.0 | 100.0 | 48.6 | 72.0 |
| 479 | Brass sheets | 1913–38 | M | F | S | D | D | D | P | O | N | M | M | S | 1212 | 67 | VIII | 37.8 | 8 | 81.8 | 100.0 | 53.6 | 82.9 |
| 480 | Copper sheets | 1913–38 | M | F | S | D | D | D | P | O | N | M | M | S | 1212 | 68 | VIII | 32.9 | 7 | 79.7 | 100.0 | 56.6 | 79.0 |
| 481 | Zinc sheets | 1913–38 | M | F | S | D | D | D | P | O | N | M | M | S | 1212 | 34 | VI | 16.0 | 4 | 115.1 | 100.0 | 88.0 | 108.4 |
| 482 | Silver | 1913–38 | M | S | S | | D | D | P | O | N | M | M1 | S | Mining | 95 | X-b | 39.2 | 8 | 117.1 | 100.0 | 53.0 | 84.5 |
| 483 | Solder | 1926–38 | | F | S | D | D | D | | O | | | M | S | 1212 | 75 | VIII | 56.2 | 10 | 134.6 | 106.0 | 50.9 | 114.1 |
| 484 | Tin | 1913–38 | R | S | S | | D | D | P | O | N | M | M1-I | S | Import | 95 | X-b | 61.6 | 10 | 144.7 | 100.0 | 48.6 | 120.5 |
| 485 | Brass tubes | 1925–38 | | F | S | D | D | D | | O | | | M | S | 1212 | 68 | VIII | 34.1 | 8 | 84.1 | 100.0 | 54.9 | 78.0 |
| 486 | Brass wire | 1925–38 | | F | S | D | D | D | | O | | | M | S | 1126 | 67 | VIII | 38.8 | 8 | 82.2 | 100.0 | 52.4 | 82.3 |
| 487 | Copper wire | 1913–38 | M | F | S | D | D | D | P | O | N | M | M | S | 1126 | 67 | VIII | 33.5 | 10 | 79.6 | 103.0 | 39.6 | 86.2 |
| 488 | Zinc pig | 1913–38 | R | S | R | D | D | D | P | O | N | M | M1 | S | 1218 | 88 | IX | 52.8 | 10 | 112.7 | 100.0 | 47.6 | 100.8 |
| | *Plumbing and heating* | | | | | | | | | | | | | | | | | | | | | | |
| 489 | Heating boilers | 1926–38 | | F | S | D | | D | | O | | | M | D | 1321 | Discarded—Items not comparable year to year. | | | | | | | |
| 490 | Range boilers | 1926–38 | | F | S | D | | D | | O | | | M | D | 1114 | 29 | VI | 16.0 | 4 | 101.3 | 100.0 | 93.8 | 119.6 |
| 491 | Water closets | 1926–38 | | F | S | D | | D | | O | | | M | C | 1017 | 35 | VII | 29.2 | 7 | 96.0 | 100.0 | 51.2 | 60.7 |
| 492 | Lavatories | 1926–38 | | F | S | D | | D | | O | | | M | C | 1017 | 44 | VII | 13.1 | 4 | 112.5 | 100.0 | 78.5 | 83.2 |
| 493 | Radiation | 1926–38 | | F | S | D | | D | | O | | | M | D | 1119 | 24 | VI | 34.0 | 8 | 84.7 | 100.0 | 59.0 | 85.9 |
| 494 | Sinks | 1926–38 | | F | S | D | | D | | O | | | M | C | 1114 | 22 | V | 6.5 | 2 | 123.5 | 100.0 | 77.9 | 68.8 |
| 495 | Bathtubs | 1926–38 | | F | S | D | | D | | O | | | M | C | 1114 | 26 | VI | 16.8 | 4 | 123.8 | 100.0 | 74.4 | 82.5 |
| 496 | Laundry tubs | 1926–38 | | F | S | D | | D | | O | | | M | D | 1005 | 16 | IV | 20.4 | 5 | 96.4 | 100.0 | 68.8 | 78.4 |
| | VII. BUILDING MATERIALS | | | | | | | | | | | | | | | | | | | | | | |
| | *Brick and tile* | | | | | | | | | | | | | | | | | | | | | | |
| 497 | Concrete blocks | 1926–38 | | F | S | D | D | D | | O | | | M | S | 1005 | 2 | I | 5.6 | 2 | 88.3 | 100.0 | 79.9 | 69.8 |
| 498 | Common brick | 1913–38 | M | F | S | D | D | D | P | O | N | M | M | S | 1004 | 36 | VII | 30.7 | 7 | 153.4 | 100.0 | 80.0 | 139.4 |
| | Red brick | | M | | S | D | D | D | P | O | N | M | M | S | 1004 | Not included in Bureau of Labor Statistics index. | | | | | | | |
| 499 | Fire brick | 1926–38 | M | F | S | D | D | D | P | O | N | M | M | S | 1004 | 11 | III | 23.9 | 6 | 96.5 | 100.0 | 84.1 | 116.0 |
| 500 | Face brick | 1926–38 | M | F | S | D | D | D | P | O | N | M | M | S | 1004 | 18 | V | 15.1 | 4 | 119.6 | 100.0 | 89.8 | 109.8 |
| 501 | Paving brick | 1913–38 | M | F | S | D | D | D | P | O | N | M | M | S | 1004 | 19 | V | 18.2 | 5 | 99.5 | 100.0 | 71.7 | 85.9 |
| 502 | Sand lime brick | 1913–38 | M | F | S | D | D | D | P | O | N | M | M | S | 1018 | 7 | II | 14.6 | 4 | 104.9 | 100.0 | 78.6 | 86.3 |
| 503 | Silica brick | 1926–38 | M | F | S | D | D | D | P | O | N | M | M | S | 1004 | 11 | III | 24.2 | 6 | 95.3 | 100.0 | 84.1 | 116.5 |
| 504 | Drain tile | 1913–38 | M | F | S | D | D | D | P | O | N | M | M | S | 1001 | 11 | III | 29.8 | 7 | 108.0 | 100.0 | 71.3 | 102.3 |
| 505 | Floor tile | 1926–38 | M | F | S | D | D | D | P | O | N | M | M | S | 1004 | 7 | II | 43.8 | 9 | 100.0 | 100.0 | 55.2 | 97.9 |
| 506 | Hollow building tile | 1913–38 | M | F | S | D | D | D | P | O | N | M | M | S | 1004 | 12 | IV | 33.2 | 8 | 103.0 | 100.0 | 63.1 | 92.7 |
| 507 | Roofing tile | 1926–38 | M | F | S | D | D | D | P | O | N | M | M | S | 1005 | 7 | II | 2.4 | 2 | 109.4 | 100.0 | 95.2 | 95.2 |
| 508 | Wall tile | 1926–38 | M | F | S | D | D | D | P | O | N | M | M | S | 1004 | 6 | II | 12.6 | 3 | 100.0 | 100.0 | 62.6 | 50.4 |
| | *Cement* | | | | | | | | | | | | | | | | | | | | | | |
| 509 | Portland cement | 1913–38 | M | F | S | D | D | D | P | O | N | M | M | S | 1002 | 15 | IV | 17.4 | 4 | 108.9 | 100.0 | 84.7 | 104.1 |
| | Buffington cement | | M | | S | D | D | D | P | O | N | M | M | S | 1002 | Not included in Bureau of Labor Statistics index. | | | | | | | |
| | Northampton cement | | M | | S | D | D | D | P | O | N | M | M | S | 1002 | | | | | | | | |
| | *Lumber* | | | | | | | | | | | | | | | | | | | | | | |
| 510 | Douglas fir lath | 1926–38 | M | F | S | D | | D | P | O | N | F | F | S | 311 | 91 | IX | 28.8 | 7 | 110.0 | 100.0 | 74.5 | 106.7 |
| 511 | Yellow pine lath | 1913–38 | M | F | S | D | | D | P | O | N | F | F | S | 311 | 89 | IX | 52.8 | 10 | 136.2 | 100.0 | 54.5 | 114.7 |
| 512 | Red cedar | 1926–38 | | F | S | D | | D | | O | | | F | S | 311 | 27 | VI | 22.8 | 5 | 108.6 | 100.0 | 78.5 | 102.5 |
| 513 | Chestnut | 1926–38 | | F | S | D | | D | | O | | | F | S | 311 | 12 | IV | 29.2 | 7 | 122.1 | 100.0 | 85.5 | 129.5 |
| 514 | Cypress | 1926–38 | M | F | S | D | | D | P | O | N | F | F | S | 311 | 24 | VI | 26.5 | 6 | 116.3 | 100.0 | 82.8 | 118.6 |

TABLE I.—*Tentative price classification*—Continued

| B. L. S. code number | Name of commodity | Price data available | Fabrication | | | Durability | | | Use, N. B. E. R. I | Clothing, food, and other, N. R. C. | Source | | | Product differentiation, unique, differentiated or standard, N. R. C. | Census industry classification | Price flexibility | | | | Price indexes 1929=100 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Raw or manufactured, N. B. E. R. | Raw, semifinished or finished | | Durable, nondurable, B. L. S. | Durable, semidurable nondurable | | | | Farm or nonfarm, N. B. E. R. | Crop, animal, forest, or mineral, N. B. E. R. | Agriculture manufacturing, mining, forestry, and fishing, N. R. C. | | | Frequency of change 1926–33 N. R. C. | | Sensitivity N. R. C. | | | | | |
| | | | | B. L. S. | N. R. C. | | N. B. E. R. | N. R. C. | | | | | | | | Changes in 95 chances | Group number | Index of depression sensitivity | Group number | 1926 | 1929 | 1932 | 1937 |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) | (17) | (18) | (19) | (20) | (21) | (22) | (23) | (24) |
| | VII. BUILDING MATERIALS—con | | | | | | | | | | | | | | | | | | | | | | |
| | *Lumber*—Continued | | | | | | | | | | | | | | | | | | | | | | |
| 515 | Douglas fir, 1c | 1913–38 | M | F | S | D | | D | P | O | N | F | F | S | 311 | 91 | IX | 55.8 | 10 | 90.1 | 100.0 | 51.4 | 114.5 |
| 516 | Douglas fir, B | 1913–38 | M | F | S | D | | D | P | O | N | F | F | S | 311 | 91 | IX | 53.4 | 10 | 100.3 | 100.0 | 46.9 | 100.5 |
| 517 | Gum lumber | 1913–38 | M | F | S | D | | D | P | O | N | F | F | S | 311 | 59 | VIII | 45.2 | 9 | 97.4 | 100.0 | 52.0 | 94.3 |
| 518 | Hemlock | 1913–38 | M | F | S | D | | D | P | O | N | F | F | S | 311 | 39 | VII | 20.1 | 5 | 94.4 | 100.0 | 77.2 | 94.6 |
| 519 | Maple | 1913–38 | M | F | S | D | | D | P | O | N | F | F | S | 311 | 36 | VII | 47.0 | 9 | 101.9 | 100.0 | 52.5 | 99.0 |
| 520 | Oak | 1913–38 | M | F | S | D | | D | P | O | N | F | F | S | 311 | 37 | VII | 23.9 | 6 | 114.5 | 100.0 | 72.3 | 92.4 |
| 521 | White Pine | 1913–38 | M | F | S | D | | D | P | O | N | F | F | S | 311 | 38 | VII | 17.3 | 4 | 103.3 | 100.0 | 80.3 | 95.2 |
| 522 | Yellow pine flooring | 1913–38 | M | F | S | D | | D | P | O | N | F | F | S | 314 | 92 | IX | 58.6 | 10 | 120.3 | 100.0 | 49.6 | 116.5 |
| 523 | Yellow pine timbers | 1030–35 | M | F | S | D | | D | P | O | N | F | F | S | 311 | Discarded—Inadequate data. | | | | | | | |
| 524 | Ponderosa pine | 1926–38 | M | F | S | D | | D | P | O | N | F | F | S | 311 | 39 | VII | 38.6 | 8 | 98.4 | 100.0 | 64.5 | 106.2 |
| 525 | Poplar | 1913–38 | M | F | S | D | | D | P | O | N | F | F | S | 311 | 32 | VI | 30.9 | 7 | 107.4 | 100.0 | 66.1 | 94.0 |
| 526 | Redwood | 1926–38 | | F | S | D | | D | | O | | | F | S | 311 | 9 | III | 28.6 | 7 | 98.3 | 100.0 | 70.6 | 98.3 |
| 527 | Spruce | 1913–38 | M | F | S | D | | D | P | O | N | F | F | S | 311 | 76 | VIII | 34.8 | 8 | 100.1 | 100.0 | 64.2 | 98.1 |
| 528 | Cedar shingles | 1913–38 | M | F | S | D | | D | P | O | N | F | F | S | 311 | 86 | IX | 46.6 | 9 | 90.7 | 100.0 | 60.8 | 114.9 |
| 529 | Cypress shingles | 1913–38 | M | F | S | D | | D | P | O | N | F | F | S | 311 | 22 | V | 46.0 | 9 | 101.3 | 100.0 | 57.6 | 107.3 |
| | *Paint and paint materials* | | | | | | | | | | | | | | | | | | | | | | |
| 530 | Enamel | 1926–38 | | F | F | N | S | S | | O | | | M | D | 626 | 5 | II | 8.3 | 3 | 100.0 | 100.0 | 83.3 | 83.2 |
| 531 | Inside flat paint | 1926–38 | | F | F | N | S | S | | O | | | M | D | 626 | 12 | IV | 2.7 | 2 | 114.9 | 100.0 | 91.6 | 88.6 |
| 532 | Outside white paint | 1926–38 | | F | F | N | S | S | | O | | | M | D | 626 | 10 | III | 17.5 | 4 | 100.7 | 100.0 | 78.8 | 92.6 |
| 533 | Porch and deck paint | 1926–38 | | F | F | N | S | S | | O | | | M | D | 626 | 10 | III | 11.6 | 3 | 95.7 | 100.0 | 82.5 | 88.3 |
| 534 | Roof and barn paint | 1926–38 | | F | F | N | S | S | | O | | | M | D | 626 | 6 | II | 11.3 | 3 | 100.0 | 100.0 | 86.0 | 94.6 |
| 535 | Floor varnish | 1926–38 | | F | F | N | S | S | | O | | | M | D | 626 | 6 | II | 11.4 | 3 | 100.0 | 100.0 | 86.2 | 95.3 |
| 536 | Barytes | 1913–38 | | S | R | N | S | S | | O | | | Mi | S | Mining | 2 | I | −.8 | 1 | 111.5 | 100.0 | 100.0 | 98.3 |
| 537 | Butyl acetate | 1926–38 | | S | S | N | S | S | | O | | | M | S | 608 | 41 | VII | 3.8 | 2 | 115.3 | 100.0 | 75.9 | 59.4 |
| 538 | Bone black | 1913–38 | | F | S | N | S | S | | O | | | M | S | 606 | 0 | I | 7.2 | 2 | 100.0 | 100.0 | 100.0 | 114.4 |
| 539 | Carbon | 1926–38 | | S | S | N | S | S | | O | | | M | S | 606 | 18 | V | 38.7 | 8 | 102.8 | 100.0 | 36.1 | 49.6 |
| 540 | Iron oxide, black | 1926–38 | | S | S | N | S | S | | O | | | M | S | 626 | 4 | I | 11.3 | 3 | 105.0 | 100.0 | 77.5 | 77.6 |
| 541 | Lamp black | 1913–38 | | F | S | N | S | S | | O | | | M | S | 606 | 7 | II | −.6 | 1 | 105.7 | 100.0 | 85.8 | 70.5 |
| 542 | Prussian blue | 1926–38 | | S | S | N | S | S | | O | | | M | S | 626 | 10 | III | 1.8 | 2 | 94.4 | 100.0 | 102.1 | 107.9 |
| 543 | Chrome green | 1926–38 | | S | S | N | S | S | | O | | | M | S | 626 | 6 | II | 8.8 | 3 | 102.9 | 100.0 | 85.2 | 88.1 |
| 544 | Chrome yellow | 1926–38 | | S | S | N | S | S | | O | | | M | S | 626 | 21 | V | 1.0 | 2 | 102.9 | 100.0 | 94.5 | 91.0 |
| 545 | Ethyl acetate | 1926–38 | | S | S | N | S | S | | O | | | M | S | 608 | 29 | VI | 8.7 | 3 | 68.0 | 100.0 | 66.3 | 50.0 |
| 546 | Copal gum | 1913–38 | | S | R | N | S | S | | O | | | M–I | S | Import | 29 | VI | 24.0 | 6 | 115.2 | 100.0 | 72.1 | 92.2 |
| 547 | Red lead | 1913–38 | M | F | S | N | S | S | P | O | N | M | M | S | 626 | 61 | VIII | 30.9 | 7 | 114.0 | 100.0 | 65.5 | 92.8 |
| 548 | White lead | 1913–38 | M | F | S | N | S | S | P | O | N | M | M | S | 626 | 15 | IV | 9.3 | 3 | 110.7 | 100.0 | 87.2 | 93.0 |
| 549 | Litharge | 1913–38 | M | F | S | N | S | S | P | O | N | M | M | S | 626 | 63 | VIII | 34.3 | 8 | 120.9 | 100.0 | 61.7 | 92.0 |
| 550 | Lithopone | 1913–38 | M | F | S | N | S | S | P | O | N | M | M | S | 626 | 3 | I | 6.7 | 2 | 104.4 | 100.0 | 85.7 | 84.8 |
| 551 | Chinawood oil | 1913–38 | | S | R | N | S | S | | O | | | A–I | S | Import | 85 | IX | 61.8 | 10 | 95.4 | 100.0 | 42.9 | 109.3 |
| 552 | Linseed oil | 1913–38 | M | S | S | N | S | S | P | O | F | C | A | S | 623 | 92 | IX | 42.4 | 9 | 91.0 | 100.0 | 51.5 | 87.9 |
| 553 | Putty | 1913–38 | | F | S | N | S | S | | O | | | M | S | 626 | 17 | V | 27.2 | 6 | 27.2 | 100.0 | 65.1 | 84.1 |
| 554 | Rosin, grade B | 1913–38 | M | S | S | N | S | S | P | O | N | F | F | S | 317 | 94 | X-a | 61.9 | 10 | 148.4 | 100.0 | 39.5 | 102.8 |
| | Rosin, grade H | | M | S | S | N | S | S | P | O | N | F | F | S | 317 | Not included in Bureau of Labor Statistics index. | | | | | | | |
| 555 | Shellac | 1913–38 | M | F | S | N | S | S | P | O | N | F | M | S | 626 | 87 | IX | 40.6 | 9 | 82.0 | 100.0 | 24.8 | 30.9 |
| 556 | Turpentine, southern | 1913–38 | M | S | S | N | S | S | P | O | N | F | F | S | 317 | 95 | Xb | 6.7 | 2 | 169.2 | 100.0 | 78.5 | 70.4 |
| | Turpentine, Savannah | | M | S | S | N | S | S | P | O | N | F | F | S | 317 | Not included in Bureau of Labor Statistics index. | | | | | | | |
| 557 | Whiting | 1926–38 | | S | R | N | S | S | | O | | | M | S | Mining | 1 | I | 3.7 | 2 | 125.0 | 100.0 | 100.0 | 107.4 |
| 558 | Zinc oxide | 1913–38 | M | F | S | N | S | S | P | O | N | M | M | S | 626 | 10 | III | 9.3 | 3 | 112.1 | 100.0 | 86.0 | 90.6 |
| | *Other building materials* | | | | | | | | | | | | | | | | | | | | | | |
| 559 | Asphalt | 1918–38 | M | F | S | | | D | P | O | N | M | Mi | S | 705 | 3 | I | 16.7 | 4 | 100.0 | 100.0 | 83.3 | 100.0 |
| 560 | Plasterboard | 1926–38 | | F | S | D | | D | | O | | | M | D | 1020 | 3 | I | −8.6 | 1 | 112.2 | 100.0 | 105.3 | 93.4 |
| 561 | Wallboard | 1926–38 | | F | S | D | | D | | O | | | M | D | 1020 | 9 | III | 5.6 | 2 | 120.8 | 100.0 | 90.2 | 91.7 |
| 562 | Doors | 1926–38 | | F | S | D | | D | | O | | | M | S | 314 | 14 | IV | 27.8 | 7 | 98.4 | 100.0 | 77.9 | 111.3 |
| 563 | Doorframes | 1926–38 | | F | S | D | | D | | O | | | M | S | 314 | 7 | II | 15.7 | 4 | 101.9 | 100.0 | 83.5 | 98.4 |
| 564 | Window frames | 1926–38 | | F | S | D | | D | | O | | | M | S | 314 | 8 | III | 15.7 | 4 | 104.0 | 100.0 | 83.5 | 98.4 |
| 565c | Plate glass | 1913–38 | M | F | S | D | | D | P | O | N | M | M | S | 1008 | 6 | II | −6.1 | 1 | 118.8 | 100.0 | 94.5 | 76.7 |
| 565 | Plate glass 3–5 square feet | 1913–38 | M | F | S | D | | D | P | O | N | M | M | S | 1008 | Included in 565c. | | | | | | | |
| 566 | Plate glass 5–10 square feet | 1913–38 | M | F | S | D | | D | P | O | N | M | M | S | 1008 | | | | | | | | |
| 567c | Window glass | 1913–38 | M | F | S | D | | D | P | O | N | M | M | S | 1008 | 13 | IV | 23.0 | 5 | 91.9 | 100.0 | 64.7 | 75.4 |
| 567 | Window glass A | 1913–38 | M | F | S | D | | D | P | O | N | M | M | S | 1008 | Included in 567c. | | | | | | | |
| 568 | Window glass B | 1913–38 | M | F | S | D | | D | P | O | N | M | M | S | 1008 | | | | | | | | |
| 569 | Gravel | 1913–38 | R | R | R | | | D | P | O | N | M | Mi | S | Quarrying | 13 | IV | 12.6 | 3 | 103.8 | 100.0 | 86.3 | 97.8 |
| 570 | Quicklime | 1913–38 | M | F | S | D | D | D | P | O | N | M | M | S | 1013 | 34 | VI | 7.8 | 3 | 112.5 | 100.0 | 86.8 | 89.2 |
| 571 | Slaked lime | 1913–38 | M | F | S | D | D | D | P | O | N | M | M | S | 1013 | 14 | IV | 11.8 | 3 | 108.1 | 100.0 | 85.5 | 94.6 |
| 572 | Sewer pipe | 1913–38 | | F | S | D | | D | | O | | | M | S | 1005 | 13 | IV | 13.8 | 4 | 132.1 | 100.0 | 81.9 | 91.5 |
| 573 | Plaster | 1926–38 | | S | S | D | | D | | O | | | M | S | 1020 | 8 | III | −20.6 | 1 | 141.2 | 100.0 | 158.9 | 176.6 |
| 574c | Prepared roofing | 1936–38 | | F | S | | | D | | O | | | M | D | 1638 | 37 | VII | 13.0 | 4 | 130.7 | 100.0 | 94.1 | 114.2 |
| 574 | Individual prepared shingles | 1926–38 | | F | S | | | D | | O | | | M | D | 1638 | Included in 574c. | | | | | | | |
| 575 | Prepared roofing, medium | 1626–38 | | F | S | | | D | | O | | | M | D | 1638 | | | | | | | | |
| 576 | Prepared roofing, slate | 1926–38 | | F | S | | | D | | O | | | M | D | 1638 | | | | | | | | |
| 577 | Strip shingles | 1926–38 | | F | S | | | D | | O | | | M | D | 1638 | 41 | VII | 13.6 | 4 | 144.9 | 100.0 | 107.4 | 142.0 |
| 578 | Slate | 1913–38 | M | F | S | | | D | P | O | N | M | Mi | S | 1638 | 6 | II | 18.0 | 5 | 100.0 | 100.0 | 62.6 | 61.1 |
| 579 | Sand | 1913–38 | R | R | R | | | D | P | O | N | M | Mi | S | Quarrying | 14 | IV | 13.6 | 4 | 108.3 | 100.0 | 92.0 | 111.1 |
| 580 | Window sash | 1926–38 | | F | S | D | | D | | O | | | M | S | 314 | 12 | IV | 36.8 | 8 | 100.0 | 100.0 | 70.6 | 114.8 |
| 581 | Stone, crushed | 1913–38 | R | R | R | | | D | P | O | N | M | Mi | S | Quarrying | 7 | II | .3 | 1 | 93.3 | 100.0 | 93.2 | 87.0 |
| 582 | Tar | 1926–38 | | S | S | N | | D | | O | | | Mi | S | 633 | 22 | V | 29.6 | 7 | 130.7 | 100.0 | 71.6 | 102.5 |

TABLE I. *Tentative price classification*—Continued

| B. L. S. code number | Name of commodity | Price data available | Fabrication: Raw or partly manufactured, N. B. E. R. | Fabrication: Raw, semifinished or finished, B. L. S. | Fabrication: Raw, semifinished or finished, N. R. C. | Durability: Durable, nondurable, B. L. S. | Durability: Durable, semidurable, nondurable, N. B. E. R. | Durability: Durable, semidurable, nondurable, N. R. C. | Use, N. B. E. R. | Clothing, food, and other, N. R. C. | Source: Farm or nonfarm, N. B. E. R. | Source: Crop, animal, forest, or mineral, N. B. E. R. | Agriculture, manufacturing, mining, forestry, and fishing, N. R. C. | Product differentiation, unique, differentiated or standard, N. R. C. | Census industry classification | Price flexibility: Frequency of change 1926–33 N. R. C. | Price flexibility: Changes in 95 changes | Price flexibility: Group number | Price flexibility: Sensitivity N. R. C. | Price flexibility: Index of depression sensitivity | Price flexibility: Group number | Price Indexes 1929=100: 1926 | 1929 | 1932 | 1937 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) | (17) | (18) | (19) | (20) | (21) | (22) | (23) | (24) |
| | VIII. CHEMICALS AND DRUGS | | | | | | | | | | | | | | | | | | | | | | |
| | *Chemicals* | | | | | | | | | | | | | | | | | | | | | | |
| 583 | Acetic acid | 1913–38 | | F | S | N | | N | | O | | | M | | 608 | 21 | V | 14.1 | 4 | 84.0 | 100.0 | 67.1 | 62.4 |
| 584 | Boric acid | 1913–38 | | F | F | N | | N | | O | | | M | | 608 | 11 | III | 11.6 | 3 | 150.2 | 100.0 | 85.0 | 93.2 |
| 585 | Carbon dioxide, liquid | 1913–38 | | F | S | N | | N | | O | | | M | | 608 | 0 | I | 0 | 1 | 100.0 | 100.0 | 100.0 | 100.0 |
| 586 | Muriatic acid | 1913–38 | | F | S | N | | N | | O | | | M | | 608 | 6 | II | 1.2 | 2 | 84.5 | 100.0 | 100.0 | 102.5 |
| 587 | Nitric acid | 1913–38 | | F | S | N | | N | | O | | | M | | 608 | 5 | II | 0 | 1 | 98.6 | 100.0 | 100.0 | 100.0 |
| 588 | Oleic acid | 1913–38 | M | F | S | N | | N | M | O | F | A | M | | 608 | 42 | VII | 44.0 | 9 | 94.6 | 100.0 | 58.3 | 104.6 |
| 589 | Phosphoric acid | 1933–38 | | F | S | N | | N | | O | | | M | | 608 | Discarded—Inadequate data. | | | | | | | |
| 590 | Salicylic acid | 1913–38 | | F | S | N | | N | | O | | | M | | 608 | 4 | I | 0 | 1 | 85.5 | 100.0 | 100.0 | 100.0 |
| 591 | Stearic acid | 1913–38 | | F | S | N | | N | | O | | | M | | 608 | 41 | VII | 33.5 | 8 | 88.8 | 100.0 | 57.1 | 81.2 |
| 592 | Sulphuric acid | 1913–38 | M | F | S | N | | N | M | O | N | M | M | | 608 | 4 | I | 1.2 | 2 | 93.5 | 100.0 | 100.0 | 102.5 |
| 593 | Denatured alcohol | 1913–38 | M | F | S | N | | N | M | O | F | C | M | | 608 | 40 | VII | 8.0 | 3 | 64.4 | 100.0 | 78.0 | 71.9 |
| 594 | Wood alcohol | 1913–38 | | F | S | N | | N | | O | | | M | | 633 | 28 | VI | 17.0 | 4 | 111.4 | 100.0 | 64.8 | 63.5 |
| 595 | Aluminum sulphate | 1913–38 | M | F | S | N | | N | M | O | N | M | M | | 608 | 4 | I | 8.9 | 3 | 100.0 | 100.0 | 89.3 | 96.4 |
| 596 | Anhydrous ammonia | 1913–38 | M | F | S | N | | N | M | O | N | M | M | | 608 | 18 | V | −3.6 | 1 | 93.9 | 100.0 | 110.8 | 114.2 |
| 597 | Aqua ammonia | 1926–38 | M | F | S | N | | N | M | O | N | M | M | | 608 | 17 | V | −5.0 | 1 | 131.6 | 100.0 | 100.0 | 90.0 |
| 598 | Anilin oil | 1913–38 | | F | S | N | | N | | O | | | M | | 608 | 13 | IV | −1.6.6 | 1 | 109.1 | 100.0 | 106.6 | 100.0 |
| 599 | Arsenic, white | 1913–38 | | F | S | N | | N | | O | | | M | | 608 | 7 | II | −13.5 | 1 | 87.5 | 100.0 | 101.0 | 75.0 |
| 600 | Baking powder, 1 pound | 1926–38 | | F | F | N | | N | | O | N | | M | D | 603 | 7 | II | −1.8.8 | 1 | 111.6 | 100.0 | 94.8 | 72.1 |
| 601 | Baking powder, 10 pounds | 1926–38 | | F | S | N | | N | | O | N | | M | D | 603 | 4 | I | −1.2.8 | 1 | 100.0 | 100.0 | 96.3 | 86.9 |
| 602 | Benzine | 1913–38 | M | F | S | N | | N | M | O | N | M | M | | 705 | 24 | VI | −3.0 | 1 | 106.6 | 100.0 | 88.2 | 70.5 |
| 603 | Bleaching powder | 1913–38 | M | F | S | N | | N | M | O | N | M | M | | 609 | 4 | I | 12.5 | 3 | 100.0 | 100.0 | 87.5 | 100.0 |
| 604 | Borax | 1913–38 | M | F | S | N | | N | M | O | N | M | M | | 608 | 10 | III | 12.3 | 3 | 176.1 | 100.0 | 81.9 | 88.4 |
| 605 | Calcium acetate | 1913–38 | | F | S | N | | N | | O | | | M | | 608 | 15 | IV | 19.9 | 5 | 72.9 | 100.0 | 73.5 | 46.8 |
| 606 | Calcium arsenate | 1921–38 | | F | S | N | | N | | O | | | M | | 608 | 23 | VI | 14.8 | 4 | 105.2 | 100.0 | 80.1 | 89.8 |
| 607 | Calcium carbide | 1926–38 | | F | S | N | | N | | O | | | M | | 608 | 2 | I | 0 | 1 | 102.0 | 100.0 | 100.0 | 100.0 |
| 608 | Calcium chloride | 1913–38 | | F | S | N | | N | | O | | | M | | 608 | 6 | II | 4.1 | 2 | 105.0 | 100.0 | 90.0 | 88.2 |
| 609 | Coal tar, black | 1913–38 | M | F | S | S | | S | M | O | N | M | M | | 608 | 4 | I | 0 | 1 | 98.3 | 100.0 | 100.0 | 100.0 |
| 610 | Coal tar, brown | 1913–38 | M | F | S | S | | S | M | O | N | M | M | | 608 | 7 | II | .4 | 1 | 81.9 | 100.0 | 99.6 | 100.0 |
| 611 | Coal tar, indigo | 1913–38 | M | F | S | S | | S | M | O | N | M | M | | 608 | 2 | I | 0 | 1 | 93.4 | 100.0 | 100.0 | 100.0 |
| 612 | Coal tar, nigrosine | 1913–38 | M | F | S | S | | S | M | O | N | M | M | | 608 | 8 | III | 16.9 | 4 | 91.2 | 100.0 | 68.1 | 70.0 |
| 613 | Copperas | 1913–38 | | F | S | N | | N | | O | | | M | | 608 | 12 | IV | 8.6 | 3 | 97.4 | 100.0 | 87.5 | 92.2 |
| 614 | Copper sulphate | 1913–38 | | F | S | N | | N | | O | | | M | | 608 | 56 | VIII | 44.4 | 9 | 79.6 | 100.0 | 48.7 | 86.3 |
| 615 | Creosote | 1913–38 | M | F | S | N | | N | M | O | N | F | M | | 633 | 10 | III | 19.1 | 5 | 93.9 | 100.0 | 74.8 | 88.4 |
| 616 | Formaldehyde | 1913–38 | | F | S | N | | N | | O | | | M | | 608 | 21 | V | 15.7 | 4 | 106.2 | 100.0 | 65.9 | 63.2 |
| 617 | Logwood extract | 1926–38 | | F | S | N | | N | | O | | | M | | 602 | 54 | IV | 27.9 | 7 | 89.9 | 100.0 | 81.7 | 119.2 |
| 618 | Naphthalene | 1913–38 | | F | S | N | | N | | O | | | M | | 608 | 16 | IV | 21.8 | 6 | 122.2 | 100.0 | 105.7 | 161.1 |
| 619 | Pine oil | 1926–38 | | S | S | N | | N | | O | | | M | | 633 | 36 | VII | 8.5 | 3 | 98.5 | 100.0 | 92.8 | 102.6 |
| 620 | Caustic potash | 1913–38 | | F | S | N | | N | | O | | | M | | 608 | 9 | III | 4.5 | 2 | 101.3 | 100.0 | 91.2 | 91.4 |
| 621 | Quebracho extract | 1926–38 | | F | S | N | | N | | O | | | M | | 632 | 23 | VI | 42.0 | 9 | 99.4 | 100.0 | 46.2 | 76.4 |
| 622 | Sal soda | 1913–38 | | F | S | N | | N | | O | | | M | | 608 | 0 | III | 2.2 | 2 | 107.3 | 100.0 | 105.1 | 116.6 |
| 623 | Salt cake | 1913–38 | | F | S | N | | N | | O | | | M | | 630 | 22 | V | 5.6 | 2 | 120.3 | 100.0 | 82.3 | 75.8 |
| 624 | Granulated salt | 1913–38 | M | F | RF | N | | N | C | O | N | M | M | | 630 | 9 | III | −2.2 | 1 | 113.8 | 100.0 | 103.9 | 103.4 |
| 625 | Soda ash | 1913–38 | M | F | S | N | | N | M | O | N | M | M | | 608 | 13 | IV | 5.2 | 2 | 106.3 | 100.0 | 87.8 | 86.0 |
| 626 | Sodium bicarbonate | 1913–38 | M | F | F | N | | N | M | O | N | M | M | | 608 | 3 | I | 1.6 | 2 | 95.0 | 100.0 | 92.5 | 88.1 |
| 627 | Caustic soda | 1913–38 | M | F | S | N | | N | M | O | N | M | M | | 608 | 16 | IV | 3.6 | 2 | 108.5 | 100.0 | 88.1 | 84.1 |
| 628 | Sodium silicate | 1913–38 | M | F | S | N | | N | M | O | N | M | M | | 608 | 7 | II | 0 | 1 | 111.4 | 100.0 | 107.1 | 111.3 |
| 629 | Sodium sulphide | 1926–38 | | F | S | N | | N | | O | | | M | | 608 | 11 | III | −1.3 | 1 | 108.1 | 100.0 | 101.2 | 99.8 |
| 630 | Crude sulphur | 1913–38 | R | R | R | N | | N | M | O | N | M | M | | Mining | 3 | I | 0 | 1 | 101.2 | 100.0 | 100.0 | 100.0 |
| 631 | Tallow, packers' | 1913–38 | M | F | S | N | | N | M | O | F | A | A | | 123 | 90 | IX | 61.0 | 16 | 102.7 | 100.0 | 37.6 | 97.2 |
| 632 | Toluene | 1913–38 | | F | S | N | | N | | O | | | M | | 608 | 10 | III | 12.5 | 3 | 87.5 | 100.0 | 75.0 | 75.0 |
| 633 | Palm kernel oil | 1913–38 | | S | S | | | N | | O | | | A I | | Import | 67 | VIII | 28.6 | 7 | 119.2 | 100.0 | 57.1 | 71.5 |
| 634 | Palm niger oil | 1913–38 | M | S | S | | | N | M | O | N | C | A I | | ...do... | 88 | IX | 41.8 | 9 | 108.3 | 100.0 | 39.0 | 67.5 |
| | *Drugs and pharmaceuticals* | | | | | | | | | | | | | | | | | | | | | | |
| 635 | Citric acid | 1913–38 | | F | S | N | | N | | O | | | M | | 608 | 24 | VI | 9.6 | 3 | 97.2 | 100.0 | 67.2 | 53.7 |
| 636 | Tartaric acid | 1913–38 | | F | S | N | | N | | O | | | M | | 608 | 46 | VII | 20.6 | 5 | 76.2 | 100.0 | 60.2 | 61.6 |
| 637 | Grain alcohol | 1913–38 | M | F | S | N | | N | M | F | F | C | M | | 133 | 22 | V | 42.2 | 9 | 177.0 | 100.0 | 91.0 | 166.4 |
| 638 | Caffeine | 1926–38 | | F | S | N | | N | | O | | | M | | 611 | 24 | V | 9.8 | 3 | 119.6 | 100.0 | 80.5 | 80.7 |
| 639 | Camphor | 1913–38 | M | S | SF | N | | N | M | O | N | F | M | | Import | 85 | IX | 27.4 | 6 | 120.2 | 100.0 | 67.1 | 89.1 |
| 640 | Castor oil | 1913–38 | M | F | SF | N | | N | C | O | F | C | M | | 625 | 42 | VII | 15.2 | 4 | 96.1 | 100.0 | 74.7 | 79.8 |
| 641 | Chlorine, liquid | 1926–38 | | F | S | N | | N | | O | | | M | | 610 | 18 | V | 29.3 | 7 | 135.3 | 100.0 | 57.1 | 72.8 |
| 642 | Chloroform | 1926–38 | | F | S | N | | N | | O | | | M | | 608 | 5 | II | 14.7 | 2 | 106.2 | 100.0 | 88.4 | 106.2 |
| 643 | Cream of tartar | 1913–38 | ... | F | SF | N | | N | | F | | | M | | 608 | 42 | VII | 17.1 | 4 | 106.2 | 100.0 | 88.4 | 106.2 |
| 644 | Epsom salts | 1913–38 | | F | SF | N | | N | | O | | | M | | 608 | 6 | II | −7.1 | 1 | 98.9 | 100.0 | 103.2 | 92.2 |
| 645 | Glycerin, chemically pure | 1913–38 | M | F | S | N | | N | M | O | F | O | M | | 648 | 48 | VII | 55.0 | 10 | 190.8 | 100.0 | 73.7 | 159.5 |
| 646 | Iodine | 1913–38 | | F | F | N | | N | | O | | | M | | 638 | 14 | IV | −10.8 | 1 | 100.0 | 100.0 | 77.0 | 32.3 |
| 647 | Menthol | 1913–38 | | F | S | | | N | | O | | | M I | | Menthol | 89 | IX | 26.2 | 6 | 100.8 | 100.0 | 55.8 | 64.1 |
| 648 | Opium | 1913–38 | | S | S | | | N | C | O | N | M | M I | | Import | 10 | III | .4 | 1 | 96.5 | 100.0 | 95.8 | 92.5 |
| 649 | Hydrogen peroxide | 1913–38 | M | F | F | N | | N | | O | | | M | | 608 | 4 | I | 6.0 | 2 | 99.5 | 100.0 | 90.7 | 93.5 |
| 650 | Phenol | 1913–38 | | F | S | N | | N | | O | | | M | | 608 | 17 | V | −4.0 | 1 | 143.3 | 100.0 | 103.7 | 99.1 |
| 651 | Potassium iodide | 1926–38 | | F | S | N | | N | | O | | | M | | 608 | 22 | V | −18.3 | 1 | 111.5 | 100.0 | 82.5 | 28.4 |
| 652 | Quinine sulphate | 1913–38 | | F | F | N | | N | | O | | | M | | 611 | 15 | IV | 17.2 | 4 | 107.6 | 100.0 | 99.0 | 132.4 |
| 653 | Sodium phosphate | 1913–38 | ... | F | S | N | | N | | O | | | M | | 608 | 17 | V | −.2 | 1 | 100.0 | 100.0 | 82.8 | 65.3 |
| 654 | Strychnine | 1926–38 | ... | F | S | N | | N | | O | | | M | | 611 | 13 | IV | 3.2 | 2 | 89.8 | 100.0 | 83.7 | 73.7 |
| 655 | Zinc chloride | 1913–38 | ... | F | S | N | | N | | O | | | M | | 608 | 15 | IV | 4.8 | 2 | 101.4 | 100.0 | 84.4 | 78.4 |
| | *Fertilizer materials* | | | | | | | | | | | | | | | | | | | | | | |
| 656 | Ammonium sulphate | 1913–38 | M | F | S | N | | N | F | O | N | M | M | | 614 | 70 | VIII | 36.7 | 8 | 118.8 | 100.0 | 40.3 | 54.0 |
| 657 | Bones, ground | 1913–38 | ... | F | S | N | | N | | O | | | X | | 614 | 38 | VII | 33.8 | 8 | 93.0 | 100.0 | 51.8 | 71.3 |
| 658 | Phosphate rock | 1913–38 | R | R | R | N | | N | P | O | N | M | Mi | | 614 | 10 | III | −20.2 | 1 | 101.3 | 100.0 | 100.0 | 59.7 |
| 659 | Kainit, 20 percent | 1913–38 | ... | F | S | N | ... | N | ... | O | | | M | | 614 | 9 | III | 5.6 | 2 | 91.5 | 100.0 | 101.1 | 113.9 |

TABLE I.—*Tentative price classification*—Continued

| B. L. S. code number | Name of commodity | Price data available | Fabrication: Raw or manufactured, N. B. E. R. | Fabrication: Raw, semifinished or finished: B. L. S. | Fabrication: Raw, semifinished or finished: N. R. C. | Durability: Durable, nondurable, B. L. S. | Durability: Durable, semidurable, nondurable: N. B. E. R. | Durability: Durable, semidurable, nondurable: N. R. C. | Use, N. B. E. R. | Clothing, food, and other, N. R. C. | Source: Farm or nonfarm, N. B. E. R. | Source: Crop, animal, forest, or mineral, N. B. E. R. | Agriculture, manufacturing, mining, forestry, and fishing, N. R. C. | Product differentiation, unique, differentiated or standard, N. R. C. | Census industry classification | Price flexibility: Frequency of change 1926–33 N. R. C.: Changes in 95 changes | Price flexibility: Frequency of change 1926–33 N. R. C.: Group number | Price flexibility: Sensitivity N. R. C.: Index of depression sensitivity | Price flexibility: Sensitivity N. R. C.: Group number | Price indexes 1929=100: 1926 | 1929 | 1932 | 1937 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) | (17) | (18) | (19) | (20) | (21) | (22) | (23) | (24) |
| | VIII. CHEMICALS AND DRUGS—continued | | | | | | | | | | | | | | | | | | | | | | |
| | *Fertilizer materials*—Continued | | | | | | | | | | | | | | | | | | | | | | |
| 660 | Manure salts, 20 percent | 1913–38 | | F | S | N | | N | | O | | | M | S | 614 | 10 | III | 1.5 | 2 | 94.5 | 100.0 | 98.2 | 99.4 |
| 661 | Muriate of potash, 80 percent | 1913–38 | M | F | S | N | | N | P | O | N | M | M | S | 614 | 6 | II | −13.3 | 1 | 95.9 | 100.0 | 101.4 | 76.2 |
| 662 | Sulphate of potash, 90 percent | 1913–38 | | F | S | N | | N | | O | | | M | S | 614 | 10 | III | −11.3 | 1 | 96.7 | 100.0 | 100.3 | 78.0 |
| 663 | Sodium nitrate | 1913–38 | R | R | R | N | | N | P | O | N | M | M | S | 614 | 60 | VIII | 9.2 | 3 | 118.2 | 100.0 | 73.5 | 65.4 |
| 664 | Superphosphate | 1913–38 | M | F | S | N | | N | P | O | N | M | M | S | 614 | 36 | VII | 17.2 | 4 | 98.6 | 100.0 | 74.8 | 83.9 |
| 665 | Tankage | 1913–38 | R | R | S | N | | N | P | O | F | A | A | S | 123 | 57 | VIII | 63.8 | 10 | 95.9 | 100.0 | 30.3 | 88.2 |
| | *Fertilizer, mixed* | | | | | | | | | | | | | | | | | | | | | | |
| 666c | Fertilizer | 1913–38 | M | F | S | N | | N | P | O | N | M | M | D | 614 | 42 | VII | 14.8 | 4 | 103.7 | 100.0 | 71.9 | 73.4 |
| 666 | Fertilizer, Middle Atlantic | 1913–38 | M | F | S | N | | N | P | O | N | M | M | D | 614 | Included in 666c. | | | | | | | |
| 667c | Fertilizer | 1913–38 | M | F | S | N | | N | P | O | N | M | M | D | 614 | 22 | V | 17.6 | 5 | 104.6 | 100.0 | 73.2 | 81.6 |
| 667 | Fertilizer, midwest | 1913–38 | M | F | S | N | | N | P | O | N | M | M | D | 614 | Included in 667c. | | | | | | | |
| 668 | Fertilizer, northeast | 1913–38 | M | F | S | N | | N | P | O | N | M | M | D | 614 | Included in 666c. | | | | | | | |
| 669 | Fertilizer, South Atlantic | 1913–38 | M | F | S | N | | N | P | O | N | M | M | D | 614 | Included in 667c. | | | | | | | |
| 670 | Fertilizer, South Atlantic | 1913–38 | M | F | S | N | | N | P | O | N | M | M | D | 614 | Included in 666c. | | | | | | | |
| 671 | Fertilizer, southwest | 1913–38 | M | F | S | N | | N | P | O | | | M | D | 614 | Included in 666c. | | | | | | | |
| | IX. HOUSE FURNISHING GOODS | | | | | | | | | | | | | | | | | | | | | | |
| | *Furnishings* | | | | | | | | | | | | | | | | | | | | | | |
| 672 | Blankets, cotton colored | 1913–38 | M | F | F | N | | D | C | O | F | C | M | D | 203 | 21 | V | 36.2 | 8 | 113.3 | 100.0 | 55.2 | 82.9 |
| 673 | Blankets, cotton warp | 1926–38 | | F | F | N | | D | | O | | | M | D | 203 | 15 | IV | 38.4 | 8 | 113.9 | 100.0 | 63.3 | 103.3 |
| 674 | Blankets, wool | 1913–38 | | F | F | N | | D | | O | | | M | D | 212 | 15 | IV | 34.9 | 8 | 101.2 | 100.0 | 70.9 | 111.6 |
| 675 | Comforters | 1926–38 | | F | F | N | | D | | O | | | M | D | 218 | 16 | IV | 28.7 | 7 | 133.3 | 100.0 | 65.3 | 88.0 |
| 676 | Carvers | 1913–38 | M | F | F | D | | D | C | O | N | M | M | D | 1103 | 0 | I | 4.7 | 2 | 100.0 | 100.0 | 100.0 | 109.4 |
| 677 | Knives and forks | 1913–38 | M | F | F | D | | D | C | O | N | M | M | D | 1213 | 2 | I | −.3 | 1 | 100.0 | 100.0 | 96.0 | 91.4 |
| 678 | Axminster carpets | 1913–38 | M | F | F | N | | D | C | O | F | A | M | U | 201 | 7 | II | 28.4 | 7 | 108.2 | 100.0 | 70.2 | 96.6 |
| 679 | Brussels carpets | 1913–38 | M | F | F | N | | D | C | O | F | A | M | U | 201 | 6 | II | 22.8 | 5 | 103.0 | 100.0 | 81.7 | 108.9 |
| 680 | Wilton carpets | 1913–38 | M | F | F | N | | D | C | O | F | A | M | U | 201 | 9 | III | 24.2 | 6 | 111.0 | 100.0 | 84.0 | 116.4 |
| 681 | Felt-base printed carpets | 1926–38 | | F | F | N | | D | | O | | | M | D | 222 | 7 | II | 9.5 | 3 | 92.7 | 100.0 | 83.8 | 86.6 |
| 682 | Felt-base rugs | 1926–38 | | F | F | N | | D | | O | | | M | D | 222 | 9 | III | 23.2 | 5 | 126.6 | 100.0 | 62.5 | 71.4 |
| 683 | Linoleum, inlaid | 1926–38 | | F | F | N | | D | | O | | | M | D | 222 | 13 | IV | 23.4 | 6 | 90.6 | 100.0 | 69.7 | 86.1 |
| 684 | Linoleum, plain | 1926–38 | | F | F | N | | D | | O | | | M | D | 222 | 11 | III | 15.4 | 4 | 108.2 | 100.0 | 86.7 | 104.2 |
| 685 | Electric irons, automatic | 1926–38 | | F | F | D | | D | | O | | | M | U | 1303 | 7 | II | 17.2 | 4 | 112.9 | 100.0 | 65.8 | 66.0 |
| 686 | Electric irons, plain | 1926–38 | | F | F | D | | D | | O | | | M | U | 1303 | 8 | III | 9.8 | 3 | 152.0 | 100.0 | 75.8 | 71.1 |
| 687 | Electric ironers | 1926–38 | | F | F | D | | D | | O | | | M | U | 1315 | 2 | I | 6.0 | 2 | 100.0 | 100.0 | 87.9 | 87.9 |
| 688 | Oilcloth, shelf | 1926–38 | | F | F | N | | S | | O | | | M | S | 220 | 17 | V | 24.2 | 6 | 99.1 | 100.0 | 69.3 | 87.1 |
| 689 | Oilcloth, table | 1926–38 | | F | F | N | | S | | O | | | M | S | 220 | 17 | V | 23.6 | 6 | 99.8 | 100.0 | 71.0 | 89.3 |
| 690 | Oilcloth, wall | 1926–38 | | F | F | N | | S | | O | | | M | S | 220 | 7 | II | 14.4 | 4 | 113.0 | 100.0 | 80.7 | 90.1 |
| 691 | Pails, galvanized iron | 1913–38 | | F | F | D | | D | | O | | | M | D | 1109 | 47 | VII | 39.8 | 9 | 102.0 | 100.0 | 71.1 | 121.8 |
| 692 | Pillowcases | 1926–38 | | F | F | N | | S | | O | | | M | D | 218 | 43 | VII | 27.4 | 6 | 95.7 | 100.0 | 60.6 | 76.1 |
| 693 | Sewing machines, electric | 1923–38 | M | F | F | D | | D | C | O | N | M | M | U | 1312 | 5 | II | 13.0 | 4 | 91.7 | 100.0 | 78.2 | 82.4 |
| 694 | Sewing machines, treadle | 1913–38 | M | F | F | D | | D | C | O | N | M | M | U | 1312 | 4 | I | 14.2 | 4 | 95.0 | 100.0 | 84.9 | 98.3 |
| 695 | Window shades | 1926–38 | | F | F | N | | D | | O | | | M | D | 1651 | 14 | IV | 20.0 | 5 | 110.7 | 100.0 | 70.7 | 81.5 |
| 696 | Sheets | 1926–38 | | F | F | N | | S | | O | | | M | D | 218 | 43 | VII | 35.0 | 8 | 96.6 | 100.0 | 52.1 | 74.1 |
| 697 | Coal range | 1913–38 | M | F | F | D | | D | C | O | N | M | M | U | 1121 | Discarded—Items not comparable, year to year. | | | | | | | |
| 698 | Electric range | 1926–38 | M | F | F | D | | D | C | O | N | M | M | U | 1303 | 4 | I | 9.5 | 3 | 117.8 | 100.0 | 78.8 | 76.6 |
| 699 | Gas range | 1913–38 | M | F | F | D | | D | C | O | N | M | M | U | 1121 | Discarded—Inadequate data. | | | | | | | |
| 700 | Oil range | 1913–38 | M | F | F | D | | D | C | O | N | M | M | U | 1121 | Discarded—Items not comparable, year to year. | | | | | | | |
| 701 | Tablecloths | 1926–38 | | F | F | N | | S | | O | | | M | D | 218 | 11 | III | 28.8 | 7 | 103.1 | 100.0 | 70.8 | 99.1 |
| 702c | Dinner sets | 1924–38 | M | F | F | D | | D | C | O | N | M | M | U | 1017 | 1 | I | 21.8 | 5 | 105.5 | 100.0 | 95.6 | 134.8 |
| 702 | Dinner sets | 1924–38 | M | F | F | D | | D | C | O | N | M | M | U | 1017 | Included in 702c. | | | | | | | |
| 703 | Dinner sets, 3 spray | 1924–38 | M | F | F | D | | D | C | O | N | M | M | U | 1017 | | | | | | | | |
| 704 | Glass nappies | 1913–38 | | F | F | D | | D | | O | | | M | D | 1008 | 3 | I | 10.0 | 3 | 100.0 | 100.0 | 100.0 | 120.0 |
| 705 | Glass pitchers | 1913–38 | M | F | F | D | | D | C | O | N | M | M | D | 1008 | 7 | II | 17.9 | 5 | 96.8 | 100.0 | 101.7 | 139.2 |
| 706 | Plates, granite | 1913–38 | | F | F | D | | D | | O | | | M | D | 1017 | 5 | II | −5.4 | 1 | 116.7 | 100.0 | 100.0 | 89.3 |
| 707 | Cups and saucers, granite | 1913–38 | | F | F | D | | D | | O | | | M | D | 1017 | 5 | II | −6.0 | 1 | 116.7 | 100.0 | 100.0 | 88.0 |
| 708 | Tumblers | 1913–38 | | F | F | D | | D | | O | | | M | D | 1008 | 6 | II | 27.2 | 6 | 101.8 | 100.0 | 83.3 | 120.9 |
| 709 | Galvanized iron tubs | 1913–38 | M | F | F | D | | D | | O | | | M | D | 1109 | 50 | VIII | 39.5 | 9 | 103.2 | 100.0 | 70.3 | 119.7 |
| 710 | Vacuum cleaners | 1924–38 | | F | F | D | | D | | O | | | M | U | 1303 | 8 | III | 4.4 | 2 | 124.5 | 100.0 | 80.0 | 68.9 |
| 711 | Washing machines | 1926–38 | | F | F | D | | D | | O | | | M | U | 1315 | 8 | III | 13.2 | 4 | 137.2 | 100.1 | 65.0 | 56.4 |
| | *Furniture* | | | | | | | | | | | | | | | | | | | | | | |
| 712 | Metal beds | 1926–38 | | F | F | D | | D | | O | | | M | U | 309 | Discarded—Items not comparable, year to year | | | | | | | |
| 713 | Wooden beds | 1913–38 | M | F | F | D | | D | C | O | N | F | M | U | 309 | | | | | | | | |
| 714 | Bedroom benches | 1913–38 | | F | F | D | | D | | O | | | M | U | 309 | | | | | | | | |
| 715 | Bedroom chairs | 1913–38 | M | F | F | D | | D | C | O | N | F | M | U | 309 | | | | | | | | |
| 716 | Dressers, vanity table | 1913–38 | M | F | F | D | | D | C | O | N | F | M | U | 309 | | | | | | | | |
| 717 | Mattresses | 1926–38 | | F | F | N | | D | | O | | | M | U | 309 | | | | | | | | |
| 718 | Bed springs, coil | 1926–38 | | F | F | D | | D | | O | | | M | U | 309 | | | | | | | | |
| 719 | Buffets, serving tables | 1913–38 | M | F | F | D | | D | C | O | N | F | M | U | 309 | | | | | | | | |
| 720 | Dining room chairs | 1913–38 | M | F | F | D | | D | C | O | N | F | M | U | 309 | | | | | | | | |
| 721 | Dining room tables | 1913–38 | M | F | F | D | | D | C | O | N | F | M | U | 309 | | | | | | | | |
| 722 | Kitchen cabinets | 1925–38 | M | F | F | D | | D | C | O | N | (O) | M | U | 309 | | | | | | | | |
| 723 | Kitchen chairs | 1913–38 | M | F | F | D | | D | C | O | N | F | M | D | 309 | | | | | | | | |
| 724 | Electric refrigerators | 1932–38 | | F | F | D | | D | | O | | | M | U | 309 | | | | | | | | |
| 725 | Kitchen tables | 1925–38 | M | F | F | D | | D | C | O | N | (O) | M | D | 309 | | | | | | | | |
| 726 | Living room chairs | 1925–38 | M | F | F | D | | D | C | O | N | F | M | U | 309 | | | | | | | | |
| 727 | Davenports | 1913–38 | M | F | F | D | | D | C | O | N | F | M | U | 309 | | | | | | | | |
| 728 | Living room tables | 1913–38 | M | F | F | D | | D | C | O | N | F | M | U | 309 | | | | | | | | |

TABLE I.– *Tentative price classification*—Continued

| B. L. S. code number | Name of commodity | Price data available | Fabrication: Raw or manufactured, N. B. E. R. | Fabrication: Raw, semifinished or finished, B. L. S. | Fabrication: Raw, semifinished or finished, N. R. C. | Durability: Durable, nondurable, B. L. S. | Durability: Durable, semidurable, nondurable, N. B. E. R. | Durability: Durable, semidurable, nondurable, N. R. C. | Use, N. B. E. R. | Clothing, food, and other, N. R. C. | Source: Farm or nonfarm, N. B. E. R. | Source: Crop, animal, forest, or mineral, N. B. E. R. | Agriculture, manufacture, mining, forestry, and fishing, N. R. C. | Product differentiation, unique, differentiated or standard, N. R. C. | Census industry classification | Price flexibility: Frequency of change 1926–33 N. R. C. | Price flexibility: Changes, in 95 changes | Price flexibility: Group number | Price flexibility: Sensitivity N. R. C. | Price flexibility: Index of depression sensitivity | Price flexibility: Group number | Price indexes 1929=100: 1926 | 1929 | 1932 | 1937 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) | (17) | (18) | (19) | (20) | (21) | (22) | (23) | (24) |
| | IX. HOUSE FURNISHING GOODS—continued | | | | | | | | | | | | | | | | | | | | | | |
| | *Furniture*—Continued | | | | | | | | | | | | | | | | | | | | | | |
| 729 | Office chairs, side | 1926–38 | | F | F | D | | D | | O | | | M | D | 309 | | | | | | | | |
| 730 | Office chairs, swivel | 1926–38 | | F | F | D | | D | | O | | | M | D | 309 | | | | | | | | |
| 731 | Flat top desks | 1926–38 | | F | F | D | | D | | O | | | M | D | 309 | | | | | | | | |
| 732 | Typewriter desks | 1926–38 | | F | F | D | | D | | O | | | M | D | 309 | | | | | | | | |
| | X. MISCELLANEOUS | | | | | | | | | | | | | | | Discarded—Items not comparable year to year. | | | | | | | |
| | *Automobile tires and tubes* | | | | | | | | | | | | | | | | | | | | | | |
| 733 | Balloon tires | 1926–38 | M | F | F | N | | S | C | O | N | C | M | D | 803 | | | | | | | | |
| 734 | Truck and bus tires | 1926–38 | M | F | F | N | | S | C | O | N | C | M | D | 803 | | | | | | | | |
| 735 | Inner tubes | 1926–38 | | F | F | N | | S | | O | | | M | D | 803 | | | | | | | | |
| | *Cattle feed* | | | | | | | | | | | | | | | | | | | | | | |
| 736 | Bran | 1913–38 | | F | S | N | | N | | O | | | A | S | 113 | 95 | X–b | 61 6 | 10 | 86 8 | 100 0 | 37 2 | 97 7 |
| 737 | Cottonseed meal | 1913–38 | | F | S | N | | N | | O | | | A | S | 622 | 90 | IX | 53 8 | 10 | 74 1 | 100 0 | 31 1 | 75 8 |
| 738 | Linseed meal | 1913–38 | | F | S | N | | N | | O | | | A | S | 623 | 84 | IX | 31 6 | 7 | 86 6 | 100 0 | 53 9 | 71 1 |
| 739 | Middlings | 1913–38 | | F | S | N | | N | | O | | | A | S | 113 | 94 | X–a | 65 3 | 10 | 84 5 | 100 0 | 35 4 | 101 1 |
| | *Paper and pulp* | | | | | | | | | | | | | | | | | | | | | | |
| 740 | Boxboard, chip | 1913–37[2] | M | F | S | N | | N | C | O | N | F | M | S | 407 | 32 | VI | 39 2 | 8 | 116 1 | 100 0 | 70 6 | 119 6 |
| 741 | Boxboard, manila lined | 1913–37[2] | M | F | S | N | | N | C | O | N | F | M | S | 407 | 37 | VII | 34 0 | 8 | 113 0 | 100 0 | 76 6 | 921 1 |
| 742 | Boxboard, 85-pound liner | 1913–37[2] | M | F | S | N | | N | C | O | N | F | M | S | 407 | 25 | VI | 31 8 | 7 | 115 6 | 100 0 | 65 3 | 44 3 |
| 743 | Book paper | 1921–38 | | F | S | N | | SD | | O | | | M | S | 407 | 11 | III | 25 6 | 6 | 108 7 | 100 0 | 76 5 | 68 35 |
| 744 | Newsprint paper | 1926–38 | M | F | S | N | | N | M | O | N | F | M | S | 407 | 8 | III | 3 0 | 2 | 115 7 | 100 0 | 81 2 | 134 3 |
| 745 | Tissue paper | 1921–38 | | F | F | N | | N | | O | | | M | S | 407 | 8 | III | 31 0 | 7 | 106 6 | 100 0 | 86 1 | 1 10 |
| 746 | Wrapping paper | 1913–38 | M | F | F | N | | N | M | O | N | C | M | S | 407 | 10 | III | 0 | 1 | 120 9 | 100 0 | 100 0 | 100 1 |
| 747 | Wood pulp, kraft | 1926–38 | R | S | S | N | | N | M | O | N | F | M | S | 410 | 25 | VI | 38 6 | 8 | 111 0 | 100 0 | 65 9 | 108 9 |
| 748 | Wood pulp, sulphite | 1913–38 | R | S | S | N | | N | M | O | N | F | M | S | 410 | 22 | V | 51 5 | 10 | 113 0 | 100 0 | 61 9 | 126 8 |
| 749 | Wood pulp, mechanical | 1913–38 | R | S | S | N | | N | M | O | N | F | M | S | 410 | 21 | VI | 22 1 | 5 | 111 2 | 100 0 | 77 5 | 99 2 |
| 750 | Wood pulp, soda | 1921–38 | R | S | S | N | | N | M | O | N | F | M | S | 410 | 22 | V | 23 8 | 6 | 121 8 | 100 0 | 74 3 | 96 1 |
| | *Crude rubber* | | | | | | | | | | | | | | | | | | | | | | |
| 751c | Rubber, crude | 1913–38 | R | R | R | N | | S | M | O | N | F | A–I | S | Import | 94 | X–a | 81 8 | 10 | 238 1 | 100 0 | 18 1 | 99 8 |
| 751 | Rubber, amber | 1926–38 | R | R | R | N | | S | M | O | N | F | A–I | S | do | Included in 751c. | | | | | | | |
| 752 | Lastex crepe | 1926–38 | R | R | R | N | | S | M | O | N | F | M–I | S | do | | | | | | | | |
| 753 | Rubber, plantation | 1913–38 | R | R | R | N | | S | M | O | N | F | A–I | S | do | | | | | | | | |
| | *Other miscellaneous* | | | | | | | | | | | | | | | | | | | | | | |
| 754 | Wooden barrels | 1926–38 | | F | F | D | | S | | O | | | M | S | 306 | 25 | VI | 19 6 | 5 | 98 0 | 100 0 | 74 2 | 87 6 |
| 755 | Dry batteries | 1926–38 | | F | F | D | | S | | O | | | M | D | 1303 | 4 | I | −2 8 | 1 | 103 7 | 100 0 | 100 0 | 94 5 |
| 756 | Storage batteries | 1926–38 | | F | F | D | | D | | O | | | M | D | 1303 | 13 | IV | 12 5 | 3 | 123 2 | 100 0 | 75 1 | 75 2 |
| 757 | Metal caskets | 1926–38 | | F | F | D | | D | | O | | | M | D | 305 | 6 | II | 13 2 | 4 | 111 5 | 100 0 | 82 1 | 90 6 |
| 758 | Wood caskets | 1926–38 | | F | F | D | | D | | O | | | M | D | 305 | 7 | II | 10 4 | 3 | 102 5 | 100 0 | 83 7 | 88 1 |
| 759 | Cigar boxes | 1926–38 | | F | S | D | | N | | O | | | M | S | 303 | 4 | I | 2 1 | 2 | 100 0 | 100 0 | 87 5 | 79 2 |
| 760 | Matches, regular | 1926–38 | | F | F | D | | N | | O | | | M | S | 312 | 22 | V | −10 2 | 1 | 131 1 | 100 0 | 121 0 | 121 7 |
| 761 | Safety matches | 1926–38 | | F | F | D | | N | | O | | | M | S | 312 | 5 | II | −5 6 | 1 | 109 9 | 100 0 | 118 8 | 126 4 |
| 762 | Plate glass mirrors | 1926–38 | | F | F | D | | D | | O | | | M | S | 1016 | 7 | II | 72 6 | 10 | 100 0 | 100 0 | 56 9 | 159 1 |
| 763 | Cylinder oil, Oklahoma | 1913–38 | M | F | F | N | | N | M | O | N | M | Mi | S | 705 | 51 | VIII | 17 8 | 5 | 67 8 | 100 0 | 65 3 | 66 2 |
| 764 | Cylinder oil, Pennsylvania | 1913–38 | M | F | F | N | | N | M | O | N | M | Mi | S | 705 | 87 | IX | 26 7 | 6 | 71 0 | 100 0 | 49 8 | 53 0 |
| 765 | Neutral oil, Gulf | 1913–38 | M | F | F | N | | N | M | O | N | M | Mi | S | 705 | 59 | VIII | 22 8 | 5 | 126 4 | 100 0 | 65 1 | 75 9 |
| 766 | Neutral oil, Pennsylvania | 1913–38 | M | F | F | N | | N | M | O | N | M | Mi | S | 705 | 85 | IX | 33 4 | 8 | 101 0 | 100 0 | 61 1 | 89 1 |
| 767 | Asbestos pipe coverings | 1926–38 | M | F | S | D | | D | P | O | N | M | M | S | 1001 | 6 | II | 21 6 | 5 | 108 7 | 100 0 | 87 0 | 117 1 |
| 768 | Rubber heels, men's | 1926–38 | | F | S | N | | S | | O | | | M | D | 802 | 12 | IV | 23 4 | 6 | 133 9 | 100 0 | 70 0 | 86 9 |
| 769 | Rubber heels, women's | 1926–38 | | F | S | N | | S | | O | | | M | D | 802 | 12 | IV | 10 4 | 3 | 141 5 | 100 0 | 91 0 | 102 9 |
| 770 | Rubber hose | 1926–38 | | F | F | N | | S | | O | | | M | D | 802 | 10 | III | 18 8 | 5 | 132 8 | 100 0 | 90 3 | 118 2 |
| 771 | Men's rubbers | 1926–38 | | F | F | N | | S | | O | | | M | D | 804 | 8 | III | 23 3 | 6 | 110 9 | 100 0 | 75 6 | 87 9 |
| 772 | Shipping case | 1926–38 | | F | F | D | | N | | O | | | M | S | 305 | 2 | I | 4 8 | 2 | 100 0 | 100 0 | 100 0 | 90 3 |
| 773 | Soap chips | 1926–37[2] | | F | F | N | | N | | O | | | M | D | 631 | 28 | VI | 45 8 | 9 | 129 9 | 100 0 | 65 9 | 123 4 |
| 774 | Laundry soap, pound | 1913–37[2] | M | F | F | N | | N | C | O | F | O | M | D | 631 | 14 | IV | 31 6 | 7 | 95 1 | 100 0 | 58 0 | 79 3 |
| 775 | Laundry soap, 100 cakes | 1913–37[2] | M | F | F | N | | N | C | O | F | O | M | D | 631 | 4 | I | −1 4 | 1 | 100 0 | 100 0 | 93 3 | 83 8 |
| 776 | Soap powder | 1926–37[2] | | F | F | N | | N | | O | | | M | D | 631 | 25 | VI | 47 0 | 9 | 110 5 | 100 0 | 56 2 | 106 5 |
| 777 | Toilet soap | 1926–37[2] | | F | F | N | | N | | O | | | M | U | 631 | 1 | I | 7 3 | 2 | 100 0 | 100 0 | 93 8 | 102 2 |
| 778 | Laundry starch | 1913–38 | M | F | F | | | N | C | O | F | C | M | S | 113 | 19 | V | 21 1 | 5 | 109 9 | 100 0 | 78 9 | 100 0 |
| 779 | Cigarettes | 1926–38 | | F | F | N | N | N | | O | | | M | U | 1652 | 9 | III | −10 9 | 1 | 104 8 | 100 0 | 111 9 | 102 0 |
| 780 | Cigars | 1926–38 | | F | F | N | N | N | | O | | | M | U | 1608 | Discarded—Item classified by price. | | | | | | | |
| 781 | Plug tobacco | 1913–38 | M | F | F | N | N | N | C | O | F | C | M | U | 1617 | 2 | I | 0 | 1 | 100 0 | 100 0 | 95 1 | 2 25 |
| 782 | Smoking tobacco | 1913–38 | M | F | F | N | N | N | C | O | F | C | M | U | 1647 | 2 | I | 19 2 | 5 | 100 0 | 100 0 | 61 5 | 9 61 |
| 783 | Snuff | 1926–37 | | F | F | N | N | N | | O | | | M | U | 1647 | Discarded—Inadequate data. | | | | | | | |
| 784 | Paraffin | 1926–38 | | S | F | N | | N | | O | | | M | S | 705 | 84 | IX | 39 4 | 8 | 141 9 | 100 0 | 54 6 | 8 8 |

[1] P: Goods entering into capital equipment; M: Producer goods destined for human consumption; C: Consumer goods. The class Producers' Goods as given in *Economic Tendencies* is merely the sum of P and M

[2] Slight change in specification, January 1938.

(Continued from page 187)

(toluene); 650 (phenol); and 590 (salicylic acid). At the outbreak of the war Germany was the only country having a developed technique for the production of these dyestuffs; the chief source of the world's potassium salts was the salt beds of Stassfurt; the remaining three items were imported in considerable volume before the war, and their position as raw materials for explosives and munitions greatly increased the demand. These items showed an increase in price of over 500 percent during the war period. The effect of the elimination of these items is particularly noticeable in group III where most of them occur.

TABLE II.—*Frequency groups*

[Prices grouped according to frequency of change]

| Code No. | Description | Sensitivity group | Code No. | Description | Sensitivity group |
|---|---|---|---|---|---|
| | **GROUP I (0–4 CHANGES)** | | | | |
| 97 | Corn flakes | 1 | 425c | Iron ore | 2 |
| 99 | Wheat cereal | 3 | 439 | Steel rails | 1 |
| 154 | Ginger ale | 1 | 456 | Vises | 2 |
| 156 | Sodas | 2 | 474 | Nickel | 1 |
| 226 | Gloves, men's, mocha | 2 | 497 | Concrete blocks | 2 |
| 231 | Collars, men's, soft | 6 | 536 | Barytes, western | 1 |
| 232 | Collars, men's, stiff | 1 | 538 | Bone black | 2 |
| 241 | Men's dress shirts | 1 | 540 | Iron oxide | 3 |
| 293 | Underwear, men's | 2 | 550 | Lithopone, domestic | 2 |
| 367 | Grain binder | 3 | 557 | Whiting, imp. chalk | 2 |
| 368 | Cultivator, riding | 3 | 559 | Asphalt, bulk | 4 |
| 369 | Grain drill | 3 | 560 | Plastert oard | 1 |
| 370 | Engine, 3-horsepower | 2 | 585 | Carbon dioxide liquid | 1 |
| 371 | Forks, hay | 3 | 590 | Salicylic acid | 1 |
| 372 | Disk harrow | 3 | 592 | Acid, sulphuric | 2 |
| 373 | Harrow | 4 | 595 | Aluminum sulphate | 3 |
| 375 | Combination harvester-thresher | 1 | 601 | Baking powder | 1 |
| | | | 603 | Bleaching powder | 3 |
| 376 | Hoe, garden | 3 | 607 | Calcium carbide | 1 |
| 377 | Hay loader | 3 | 609 | Coal tar, black | 1 |
| 378 | Mower | 4 | 611 | Coal tar, indico | 1 |
| 379 | Corn pickers | 1 | 626 | Sodium bicarbonate | 2 |
| 380 | Corn planter | 2 | 630 | Sulphur, crude | 1 |
| 381 | Plow tractor | 3 | 649 | Peroxide of hydrogen | 2 |
| 385 | Rake, 14 teeth | 3 | 676 | Carvers, 8-inch | 2 |
| 386 | Rake, self-dumping | 3 | 677 | Knives and forks | 1 |
| 387 | Rake, side delivery | 4 | 687 | Ironers, electric | 2 |
| 389 | Corn sheller | 5 | 694 | Sewing machines | 4 |
| 391 | Spade | 3 | 698 | Ranges, electric | 3 |
| 392 | Manure spread | 3 | 702c | Dinner sets, 100 pieces | 5 |
| 393 | Grain thresher | 2 | 704 | Nappies, common | 3 |
| 394 | Tractor, 10–20 horsepower | 4 | 755 | Batteries, radio, dry | 1 |
| | | | 759 | Cigar boxes | 2 |
| 398 | Angle irons | 2 | 772 | Shipping cases | 2 |
| 399 | Augers | 1 | 775 | Soap, laundry | 1 |
| 402 | Bar iron | 2 | 777 | Toilet soap | 2 |
| 417 | Chisels | 2 | 781 | Tobacco, plug | 1 |
| 418 | Files, 8-inch | 2 | 782 | Tobacco, smoking | 5 |
| 421 | Knives, corn | 3 | | | |
| | **GROUP II (5–7 CHANGES)** | | | | |
| 95 | Bread | 3 | 543 | Chrome | 3 |
| 96 | ——do | 1 | 563 | Door frames | 4 |
| 225 | Leather belting | 2 | 565c | Glass | 1 |
| 227 | Gloves | 3 | 578 | Slate | 5 |
| 240 | Overcoats | 6 | 581 | Crushed stone | 1 |
| 336 | Cotton thread | 1 | 586 | Acid, muriatic | 2 |
| 337 | Linen shoe thread | 3 | 587 | Acid, nitric | 1 |
| 374 | Harrow | 4 | 599 | Arsenous oxide | 1 |
| 382 | Plows | 5 | 600 | Baking powder | 1 |
| 383 | ——do | 4 | 608 | Calcium chloride | 2 |
| 384 | Pumps | 5 | 610 | Sulphur brown | 1 |
| 388 | Cream separator | 3 | 628 | Sodium silicate | 1 |
| 390 | Shovels | 3 | 642 | Chloroform | 2 |
| 395 | Farm tractor | 4 | 644 | Epsom salts | 1 |
| 396 | Wagon | 1 | 661 | Potash, muriate of | 1 |
| 397 | Windmill | 4 | 678 | Carpets | 7 |
| 400 | Axe | 4 | 679 | ——do | 5 |
| 415 | Sanitary cans | 4 | 681 | Linoleum | 3 |
| 419 | Hammers | 6 | 685 | Electric irons | 4 |
| 420 | Hatchets | 5 | 690 | Wall oilcloth | 4 |
| 437 | Planes | 6 | 693 | Sewing machines | 4 |
| 443 | Saws | 2 | 705 | Pitchers | 5 |
| 444 | ——do | 2 | 706 | Plates | 1 |
| 502 | Brick, common | 4 | 707 | Tea cups and saucers | 1 |
| 505 | Floor tiles | 9 | 708 | Tumblers | 6 |
| 507 | Cement roofing, tile | 2 | 757 | Caskets, metal | 1 |
| 508 | Wall tile | 3 | 758 | Caskets, wood | 3 |
| 530 | Enamel | 3 | 761 | Matches | 1 |
| 534 | Roof and barn paint | 3 | 762 | Plate glass mirror | 10 |
| 535 | Varnish | 3 | 767 | Asbestos pipe cover | 5 |
| 541 | Lampblack, green, light | 1 | | | |

TABLE II.—*Frequency groups*—Continued

| Code No. | Description | Sensitivity group | Code No. | Description | Sensitivity group |
|---|---|---|---|---|---|
| | **GROUP III (8–11 CHANGES)** | | | | |
| 100 | Crackers | 5 | 573 | Plaster | 1 |
| 101 | Sugar cookies | 2 | 584 | Acid, boric | 3 |
| 117 | Butter pretzels | 3 | 604 | Borax | 3 |
| 155 | Grape juice | 5 | 612 | Indigo | 4 |
| 158 | Cocoa | 3 | 615 | Creosote oil | 5 |
| 190c | Shoes, small boys' | 5 | 620 | Potash, caustic | 2 |
| 191 | Shoes, child's | 2 | 622 | Sodium carbonate | 2 |
| 193 | Shoes, youth's | 4 | 624 | Salt, granulated | 1 |
| 197 | Shoes, men's | 6 | 629 | Sodium sulphide | 1 |
| 243 | Boys' suits | 7 | 632 | Toluene | 3 |
| 244 | Suits, men's | 8 | 648 | Opium | 1 |
| 247 | Topcoats | 6 | 658 | Phosphate rock | 1 |
| 250 | Men's work pants | 7 | 659 | Kainit | 2 |
| 407 | Steel barrels | 6 | 660 | Manure salts | 2 |
| 409 | Boiler tubes | 2 | 662 | Potassium sulphate | 1 |
| 435 | Pipe | 2 | 680 | Carpets | 6 |
| 436 | Pipe, galvanized steel | 2 | 682 | Linoleum, rug | 5 |
| 455 | Tin plate | 4 | 684 | Linoleum | 4 |
| 460 | Wire fencing | 4 | 686 | Electric irons | 3 |
| 499 | Fire brick | 6 | 701 | Tablecloths | 7 |
| 503 | Silica brick | 6 | 710 | Vacuum cleaner | 2 |
| 504 | Drain tile | 7 | 711 | Electric washing machine | 4 |
| 526 | California redwood | 7 | 743 | Book paper | 6 |
| 532 | House paint | 4 | 744 | Paper, newsprint | 2 |
| 533 | Porch and deck paint | 3 | 745 | Tissue paper | 7 |
| 542 | Prussian blue | 2 | 746 | Paper, wrapping | 1 |
| 558 | Zinc oxide | 3 | 770 | Garden hose | 5 |
| 561 | Building board | 2 | 771 | Rubbers, men's | 6 |
| 564 | Window frames | 4 | 779 | Cigarettes | 1 |
| | **GROUP IV (12–16 CHANGES)** | | | | |
| 45 | Milk, fresh | 5 | 513 | Lumber, chestnut | 7 |
| 92 | Bread | 1 | 531 | Inside flat paint | 2 |
| 94 | ——do | 8 | 548 | White lead | 3 |
| 176 | Salt | 2 | 562 | Doors | 7 |
| 191c | Shoes, men's | 5 | 567c | Glass | 5 |
| 206c | Shoes, women's | 3 | 569 | Gravel | 3 |
| 208 | ——do | 5 | 571 | Lime, hydrated | 3 |
| 229 | Suitcases | 6 | 572 | Sewer pipe | 4 |
| 230 | Traveling bags | 6 | 579 | Sand | 4 |
| 242 | Shirts | 7 | 580 | Window sash | 8 |
| 245 | Suits | 8 | 598 | Anilin oil | 1 |
| 252 | Table damask | 6 | 605 | Calcium acetate | 5 |
| 264 | Nainsook | 5 | 613 | Copperas | 3 |
| 269 | Filling sateen | 6 | 617 | Logwood extracts | 7 |
| 292 | Ladies' union suits | 7 | 618 | Napthalene | 6 |
| 294 | Men's union suits | 5 | 625 | Soda ash | 2 |
| 309 | Women's dress goods | 7 | 627 | Caustic soda | 2 |
| 315 | Flannel | 5 | 646 | Iodine | 1 |
| 330 | Artificial leather | 2 | 652 | Quinine | 4 |
| 331 | ——do | 2 | 654 | Strychnine | 2 |
| 334 | Rope, sisal | 5 | 655 | Zinc chloride | 2 |
| 338 | Binder twine | 7 | 673 | Blankets | 8 |
| 410 | Machine bolts | 5 | 674 | ——do | 8 |
| 413 | Track bolts | 4 | 675 | Comforters | 7 |
| 422 | Door knobs | 6 | 683 | Linoleum | 6 |
| 441 | Small rivets | 4 | 695 | Window shades | 5 |
| 453 | Terne plate | 4 | 756 | Storage battery | 3 |
| 469 | Aluminum, ingot | 1 | 768 | Rubber heels | 6 |
| 496 | Laundry tubs | 5 | 769 | ——do | 3 |
| 506 | Hollow tile | 8 | 774 | Soap | 7 |
| 509 | Cement | 4 | | | |
| | **GROUP V (17–22 CHANGES)** | | | | |
| 93 | Bread | 7 | 454 | Tie plate steel | 4 |
| 133 | Canned asparagus | 4 | 471 | Babbitt metal | 9 |
| 169 | Jelly | 3 | 494 | Sinks | 4 |
| 171 | Molasses | 3 | 500 | Brick, silica | 4 |
| 174 | Peanut butter | 9 | 501 | Paving blocks | 5 |
| 177 | Canned soup | 2 | 529 | Shingles, cypress | 9 |
| 178 | Cornstarch | 6 | 539 | Carbon black | 8 |
| 182 | Tea | 8 | 541 | Chrome yellow | 2 |
| 201c | Shoes, men's | 5 | 553 | Putty | 6 |
| 205c | Shoes, women's | 5 | 582 | Tar | 7 |
| 219 | Leather, glazed kid | 7 | 583 | Acid, acetic | 4 |
| 228 | Harness | 3 | 596 | Ammonia | 1 |
| 248 | Boys' knee pants | 10 | 597 | Aqua ammonia | 1 |
| 249 | Men's pants | 7 | 616 | Formaldehyde | 4 |
| 260 | Gingham | 9 | 623 | Salt cake | 2 |
| 295c | Rayon | 5 | 637 | Alcohol | 9 |
| 305 | Spun silk | 5 | 638 | Caffeine | 3 |
| 312 | Suiting | 9 | 641 | Chlorine | 7 |
| 314 | Women's dress goods | 5 | 650 | Phenol | 1 |
| 316 | Overcoating | 8 | 651 | Potassium iodide | 1 |
| 333 | Rope, manila | 5 | 653 | Sodium phosphate | 1 |
| 340 | Twine | 9 | 667c | Fertilizer | 5 |
| 341c | Carpet yarn | 5 | 672 | Blankets | 8 |
| 364 | Petroleum | 5 | 688 | Oilcloth | 6 |
| 411 | Plow bolts | 6 | 689 | ——do | 6 |
| 412 | Stove bolts | 6 | 748 | Wood pulp | 10 |
| 423 | Locks | 3 | 750 | ——do | 6 |
| 429 | Ferromanganese | 7 | 760 | Matches | 1 |
| 449 | Steel skelp | 5 | 778 | Starch | 5 |
| 450 | Spikes | 4 | | | |

TABLE II.—*Frequency groups*—Continued

| Code No. | Description | Sensitivity group |
|---|---|---|
| | GROUP VI (23-34 CHANGES) | |
| 43 | Milk, fresh | 3 |
| 44 | do | 7 |
| 114 | Macaroni and spaghetti | 9 |
| 120 | Apples, canned | 5 |
| 122 | Cherries, canned | 6 |
| 125 | Canned pineapple | 6 |
| 134 | Canned vegetables | 6 |
| 162 | Pink salmon | 6 |
| 220 | Harness leather | 5 |
| 258 | Cotton flannel | 8 |
| 266 | Percale | 7 |
| 275 | Woven madras | 5 |
| 280 | Toweling | 7 |
| 289 | Hose, men's | 9 |
| 287 | Hosiery | 8 |
| 289 | do | 5 |
| 291 | Underwear, men's, 2 pc. | 6 |
| 310 | Crepe | 7 |
| 311 | Flannel | 6 |
| 313 | Women's dress goods | 7 |
| 317 | Overcoating | 9 |
| 318e | Suitings | 8 |
| 322 | Unfinished worsted, suiting | 8 |
| 346 | Coal, mine run, bituminous | 3 |
| 370e | Coke | 6 |
| 401 | Bar iron | 6 |
| 405 | Steel bars, Pittsburgh | 7 |
| | GROUP VII (35-49 CHANGES) | |
| 80 | Milk, condensed | 3 |
| 91 | Powdered skimmed milk | 8 |
| 128 | Currants | 2 |
| 136 | Peas | 1 |
| 138 | String beans, canned | 7 |
| 139 | Tomatoes | 4 |
| 168 | Glucose | 8 |
| 172 | Oleomargarine | 8 |
| 186 | Vegetable oil | 5 |
| 189 | Vinegar | 5 |
| 202e | Shoes, men's | 6 |
| 221 | Leather, side chrome | 8 |
| 230 | Overalls | 9 |
| 239 | Cotton flannel | 8 |
| 270e | Sheeting | 8 |
| 277 | Ticking | 9 |
| 288 | Hosiery, women's rayon | 7 |
| 290 | Hosiery, women's silk | 7 |
| 303e | Spun silk | 5 |
| 335 | Sisal | 1 |
| 343 | Coal, anthracite | 1 |
| 344 | do | 1 |
| 345 | do | 1 |
| 347 | Coal, sized, bituminous | 5 |
| 348 | Coal, screenings, bituminous | 4 |
| 362 | Kerosene | 4 |
| 365 | Petroleum | 7 |
| 403 | Reinforcing bars | 8 |
| 404 | Steel bars | 7 |
| 406 | Bar steel, cold finish | 7 |
| 421 | Nails | 6 |
| | GROUP VIII (50-77 CHANGES) | |
| 46 | Peanuts | 10 |
| 47 | Seed, alfalfa | 10 |
| 59e | Wool | 10 |
| 65e | do | 10 |
| 90 | Milk, evaporated | 6 |
| 119 | Rice | 4 |
| 121 | Canned apricots | 6 |
| 123 | Canned peaches | 6 |
| 124 | Canned pears | 6 |
| 132 | Bananas | 3 |
| 135 | Canned corn | 7 |
| 137 | Canned spinach | 3 |
| 141e | Meat, fresh | 8 |
| 145 | Bacon | 10 |
| 163 | Fish, canned salmon | 6 |
| 164 | Fish, pickled cod | 7 |
| 165 | Fish, salt herring | 1 |
| 166 | Fish, salt, mackerel | 9 |
| 167 | Salmon, smoked | 7 |
| 173 | Oleo oil | 10 |
| 184 | Corn oil | 10 |
| 187 | Peanut oil | 10 |
| 188 | Soybean oil | 10 |
| 215 | Goatskins | 9 |
| 222e | Leather, oak | 8 |
| 253 | Denims | 8 |
| 255 | Drillings | 9 |
| 256 | Duck | 8 |
| 261e | Muslin | 7 |
| 272e | Sheeting | 9 |
| 276 | Percale | 8 |
| 321 | Worsted yarns | 9 |

TABLE II.—*Frequency groups*—Continued

| Code No. | Description | Sensitivity group |
|---|---|---|
| | GROUP VIII (50-77 CHANGES)—Continued | |
| 325e | Yarn, wool | 9 |
| 332 | Cotton rope | 8 |
| 349 | Coke | 10 |
| 366 | Petroleum | 8 |
| 434 | Pipe | 10 |
| 446 | Steel sheets | 6 |
| 447 | Automobile body sheets | 6 |
| 448 | Sheets, steel | 5 |
| 451 | Cold rolled strips | 8 |
| 475 | Lead pipe | 8 |
| 477 | Brass rods | 8 |
| 478 | Drawn copper rods | 8 |
| 479 | Brass sheets | 8 |
| 480 | Copper sheets | 7 |
| 483 | Solder | 10 |
| 485 | Brass tube | 8 |
| 486 | Brass wire | 8 |
| 487 | Copper wire | 10 |
| 517 | Lumber, gum | 9 |
| 527 | Lumber, spruce | 8 |
| 547 | Pigments | 7 |
| 549 | Litharge | 8 |
| 611 | Copper sulphate | 9 |
| 633 | Oil, palm kernel | 7 |
| 656 | Ammonia | 8 |
| 663 | Chile saltpeter | 3 |
| 665 | Tankage | 10 |
| 709 | Tubs | 9 |
| 763 | Lubricating oil | 5 |
| 765 | Neutral oil | 5 |
| | GROUP IX (78-92 CHANGES) | |
| 19e | Sheep | 10 |
| 36 | Apples | 9 |
| 39 | Hay | 8 |
| 40e | do | 7 |
| 48 | Seed | 10 |
| 50 | do | 8 |
| 54 | Potatoes | 9 |
| 58 | do | 9 |
| 103e | Flour | 9 |
| 116 | Corn meal | 10 |
| 118 | Rice | 8 |
| 126 | Apples, dried | 8 |
| 127 | Apricots, dried | 8 |
| 129 | Peaches, dried | 8 |
| 130 | Prunes | 8 |
| 131 | Raisins | 1 |
| 140 | Beef, cured | 9 |
| 146 | Pork, salted | 10 |
| 147 | Pork, dry, salted | 10 |
| 149 | Mess pork | 9 |
| 152 | Dressed poultry | 6 |
| 161 | Copra | 10 |
| 179 | Sugar | 5 |
| 183 | Coconut oil, crude | 9 |
| 211 | Cowhides | 10 |
| 214 | Calfskins | 10 |
| 216 | Hides, kip | 10 |
| 217 | Sheep pelts | 10 |
| 257 | Duck | 9 |
| 265 | Osnaburg | 9 |
| 278 | Tire fabrics | 8 |
| 279 | do | 9 |
| 281e | Cotton yarn | 9 |
| 328 | Hemp | 10 |
| 329 | Jute | 9 |
| 339 | Twine | 9 |
| 355 | Fuel oil | 10 |
| 356 | do | 7 |
| 358 | Gasoline | 7 |
| 363 | Kerosene | 5 |
| 445 | Steel, scrap | 10 |
| 472 | Copper, ingot | 10 |
| 473 | Lead, pig | 9 |
| 476 | Quicksilver | 8 |
| 488 | Zinc, pig | 10 |
| 510 | Lumber, lath | 7 |
| 511 | do | 10 |
| 515 | Lumber, sheathing | 10 |
| 516 | Lumber, siding | 10 |
| 522 | Pine, flooring | 4 |
| 528 | Lumber, shingles | 9 |
| 551 | China wood oil | 10 |
| 552 | Linseed oil, raw | 9 |
| 555 | Shellac | 9 |
| 691 | Tallow, Packer's | 10 |
| 634 | Palm nigar oil | 9 |
| 639 | Camphor | 6 |
| 647 | Menthol | 6 |
| 737 | Cottonseed meal | 10 |
| 738 | Linseed meal | 7 |
| 764 | Cylinder oil | 6 |
| 766 | Neutral oil | 8 |
| 781 | Paraffin wax | 8 |
| | GROUP X (93-95 CHANGES) | |
| 1 | Barley | 10 |
| 2c | Corn | 10 |
| 4 | Oats | 10 |
| 5 | Rye | 10 |
| 6c | Wheat | 10 |
| 12 | Calves | 9 |
| 13e | Cows | 10 |
| 15e | Steers | 9 |
| 17e | Hogs | 10 |
| 20 | Lambs | 9 |
| 22e | Poultry | 7 |
| 24e | Cotton | 9 |
| 27e | Eggs | 7 |
| 30 | do | 7 |
| 35 | Apples | 5 |
| 37 | Lemons | 5 |
| 38 | Oranges | 6 |
| 42 | Hops | 9 |
| 49 | Flaxseed | 9 |
| 51 | Tobacco | 10 |
| 52 | Beans, dried | 10 |
| 53 | Onions | 2 |
| 55e | Potatoes | 9 |
| 68e | Butter | 9 |
| 86e | Cheese | 8 |
| 98 | Oatmeal | 9 |
| 102 | Flour | 9 |
| 113 | Hominy grits | 10 |
| 115 | Corn meal | 10 |
| 143 | Lamb | 7 |
| 196e | Cotton yarn | 9 |
| 328 | Hemp | 10 |
| 329 | Jute | 9 |
| 339 | Twine | 9 |
| 355 | Fuel oil | 10 |
| 356 | do | 7 |
| 358 | Gasoline | 7 |
| 363 | Kerosene | 5 |
| 445 | Steel, scrap | 10 |
| 472 | Copper, ingot | 10 |
| 473 | Lead, pig | 9 |
| 476 | Quicksilver | 8 |
| 488 | Zinc, pig | 10 |
| 510 | Lumber, lath | 7 |
| 511 | do | 10 |
| 515 | Lumber, sheathing | 10 |
| 516 | Lumber, siding | 10 |
| 522 | Pine, flooring | 4 |
| 528 | Lumber, shingles | 9 |
| 551 | China wood oil | 10 |
| 552 | Linseed oil, raw | 9 |
| 555 | Shellac | 9 |
| 691 | Tallow, Packer's | 10 |
| 634 | Palm nigar oil | 9 |
| 639 | Camphor | 6 |
| 647 | Menthol | 6 |
| 737 | Cottonseed meal | 10 |
| 738 | Linseed meal | 7 |
| 764 | Cylinder oil | 6 |
| 766 | Neutral oil | 8 |
| 781 | Paraffin wax | 8 |
| 784 | Rubber, crude | 10 |

TABLE III.—*Sensitivity groups*

[Prices grouped according to index of depression sensitivity]

| Code No. | Item | Code No. | Item |
|---|---|---|---|
| | **GROUP 1 (SENSITIVITY −20.6–0.4 PERCENT)** | | |
| 573 | Plaster. | 601 | Baking powder. |
| 658 | Phosphate rock, 68 percent. | 375 | Combine thresher. |
| 651 | Potash, iodine. | 624 | Salt. |
| 336 | Cotton thread. | 344 | Coal. |
| 599 | Arsenic. | 96 | Bread. |
| 661 | Potash, muriate. | 775 | Soap, laundry. |
| 662 | Sulphate of potassium. | 131 | Raisins. |
| 779 | Cigarettes. | 536 | Barytes, ground. |
| 646 | Iodine. | 541 | Lampblack. |
| 760 | Matches, nonsafety. | 677 | Knives and forks. |
| 600 | Baking powder. | 653 | Soda phosphate. |
| 345 | Coal. | 154 | Ginger ale. |
| 560 | Board, plaster. | 746 | Paper, wrapping. |
| 379 | Corn picker. | 628 | Sodium silicate. |
| 644 | Epsom salts. | 587 | Acid, nitric. |
| 598 | Coal-tar products. | 609 | Coal-tar products |
| 565c | Glass, plate. | 590 | Coal tar, salicylic acid. |
| 707 | Teas, cups, saucers. | 630 | Sulphur, crude. |
| 761 | Matches, safety. | 607 | Calcium carbide. |
| 706 | Plates, granite. | 241 | Shirts, men's. |
| 597 | Ammonia, aqua. | 474 | Nickel, electrode cathodes. |
| 92 | Bread. | 611 | Coal tar, indigo paste. |
| 629 | Soda sulphide. | 781 | Tobacco, plug. |
| 650 | Phenol, carbolic acid. | 585 | Carbon dioxide. |
| 343 | Coal. | 399 | Augers. |
| 469 | Aluminum. | 439 | Rails, steel. |
| 596 | Ammonia, anhydrous. | 136 | Peas, canned. |
| 232 | Collars, men's. | 581 | Crushed stone. |
| 97 | Corn flakes. | 610 | Coal-tar products. |
| 602 | Benzene. | 648 | Opium. |
| 755 | Batteries, radio. | | |
| | **GROUP 2 (SENSITIVITY 0.5–7.5 PERCENT)** | | |
| 418 | Files, metal. | 293 | Underwear, men's. |
| 402 | Bar iron. | 435 | Pipe, steel. |
| 544 | Chrome yellow. | 330 | Artificial leather. |
| 592 | Acid, sulphuric. | 710 | Vacuum cleaner. |
| 586 | Acid, muriatic. | 620 | Potash, caustic. |
| 398 | Angle bars, steel. | 676 | Carvers, stag. |
| 409 | Boiler tubes. | 772 | Shipping cases. |
| 660 | Manure salts. | 370 | Engine, agriculture. |
| 626 | Sodium bicarbonate. | 655 | Zinc chloride. |
| 156 | Sodas. | 497 | Concrete blocks. |
| 176 | Salt. | 625 | Soda ash. |
| 417 | Chisels. | 659 | Kainit. |
| 542 | Paint. | 561 | Board, building, wall. |
| 415 | Sanitary cans. | 101 | Cookies, sugar. |
| 436 | Pipe, steel. | 128 | Currants, dried. |
| 759 | Cigar boxes. | 623 | Salt cake, ground. |
| 622 | Soda, carbonate. | 380 | Corn planter. |
| 507 | Cement roofing tile. | 687 | Ironers, electric. |
| 531 | Paint, inside. | 649 | Peroxide of hydrogen. |
| 191 | Shoes, child's. | 444 | Saws. |
| 456 | Vises. | 226 | Gloves, men's. |
| 443 | Saws. | 494 | Sinks. |
| 744 | Paper, newsprint. | 550 | Lithopone. |
| 654 | Alkaloids, strychnine. | 556 | Turpentine. |
| 53 | Onions. | 331 | Artificial leather |
| 425c | Iron ore. | 393 | Grain thresher |
| 627 | Soda, caustic. | 538 | Bone black |
| 557 | Whiting, imp. chalk. | 777 | Soap, toilet. |
| 537 | Acetate, butyl. | 225 | Leather belting. |
| 608 | Calcium, chloride. | 177 | Soup, canned. |
| | **GROUP 3 (SENSITIVITY 7.8–12.8 PERCENT)** | | |
| 367 | Grain binder. | 95 | Bread. |
| 570 | Lime, building. | 758 | Caskets, wood. |
| 391 | Spade, garden. | 769 | Rubber heels. |
| 593 | Alcohol, denatured. | 99 | Wheat cereal |
| 530 | Enamel, paint. | 228 | Harness, set. |
| 381 | Plow tractor. | 377 | Hay loader. |
| 619 | Oil, pine. | 158 | Cocoa. |
| 613 | Copperas. | 371 | Forks, hay. |
| 376 | Hoe, garden. | 392 | Manure spreader. |
| 137 | Spinach, canned. | 423 | Locks. |
| 545 | Ethyl, acetate. | 540 | Iron oxide. |
| 543 | Chrome green, light. | 534 | Roof and barn paint. |
| 171 | Molasses. | 535 | Varnish. |
| 595 | Alum, sulphate. | 169 | Jelly, grape. |
| 132 | Bananas. | 43 | Milk. |
| 663 | Soda, nitrate. | 533 | Paint, porch. |
| 558 | Zinc, oxide. | 584 | Acid, boric. |
| 548 | Lead, carbonate. | 369 | Grain drill. |
| 385 | Rake, steel. | 571 | Lime, hydrated. |
| 421 | Cork knives. | 372 | Harrow, disk. |
| 227 | Gloves, unlined | 368 | Cultivator. |
| 698 | Ranges, electric. | 604 | Borax. |

TABLE III.—*Sensitivity groups*—Continued

| Code No. | Item | Code No. | Item |
|---|---|---|---|
| | **GROUP 3 (SENSITIVITY 7.8–12.8 PERCENT)—Continued** | | |
| 681 | Linoleum. | 346 | Coal. |
| 635 | Citric acid, crystals. | 206c | Shoes, women's. |
| 388 | Cream separator. | 603 | Bleaching powder. |
| 390 | Shovels. | 632 | Coal tar, toluene. |
| 337 | Shoe thread. | 756 | Storage battery. |
| 686 | Heating appliances. | 508 | Wall tile, glazed. |
| 638 | Alkaloids. | 569 | Gravel, ton. |
| 704 | Nappies. | 117 | Pretzels, butter. |
| 386 | Rake, self-dumping. | 89 | Milk, condensed. |
| | **GROUP 4 (SENSITIVITY 13.0–17.5 PERCENT)** | | |
| 378 | Mower. | 640 | Castor oil. |
| 693 | Electric sewing machine. | 684 | Linoleum. |
| 397 | Windmill, steel. | 193 | Shoes, youths'. |
| 396 | Wagon. | 395 | Farm tractor. |
| 574c | Roofing. | 563 | Door frames. |
| 492 | Lavatories. | 564 | Window frames. |
| 757 | Caskets, metal. | 616 | Formaldehyde. |
| 711 | Washing machine. | 490 | Range boiler. |
| 383 | Plows, walking. | 481 | Zinc, sheet. |
| 133 | Asparagus, canned. | 119 | Rice, clean. |
| 579 | Sand, building. | 362 | Kerosene. |
| 348 | Coal. | 442 | Wire rods. |
| 577 | Roofing, shingles. | 559 | Asphalt, bulk. |
| 572 | Pipe, sewer. | 139 | Tomatoes, canned. |
| 387 | Rake. | 495 | Bathtubs. |
| 441 | Rivets. | 400 | Axes. |
| 416 | Iron castings. | 460 | Fencing, wire. |
| 583 | Acetic acid. | 612 | Coal tar, jet. |
| 394 | Tractor. | 457c | Wire. |
| 694 | Sewing-machine treadle. | 594 | Methanol. |
| 165 | Fish, herring. | 643 | Cream of tartar. |
| 690 | Wall oilcloth. | 374 | Harrow, 17-tooth. |
| 450 | Spikes. | 373 | Harrow, peg-tooth. |
| 502 | Brick, sandlime. | 652 | Quinine, sulphate. |
| 455 | Tin plate. | 685 | Heating appliances, electric iron. |
| 642 | Chloroform. | 664 | Superphosphate. |
| 606 | Calcium arsenate. | 521 | Lumber, pine. |
| 666c | Fertilizer. | 454 | Steel, tie plate. |
| 453 | Terneplate. | 509 | Cement, portland. |
| 500 | Brick, front. | 532 | Paint, house. |
| 413 | Track bolts. | | |
| | **GROUP 5 (SENSITIVITY 17.6–23.2 PERCENT)** | | |
| 155 | Grape juice. | 189 | Vinegar, cider. |
| 315 | Flannel. | 518 | Lumber, hemlock. |
| 667c | Fertilizer. | 120 | Apples, canned. |
| 347 | Coal. | 384 | Pumps, agriculture. |
| 179 | Sugar, granulated. | 496 | Laundry tubs. |
| 389 | Corn sheller. | 636 | Acid, tartaric. |
| 763 | Oil, lubricating. | 449 | Steel skelp. |
| 705 | Pitchers. | 334 | Rope, sisal. |
| 578 | Slate, roofing. | 363 | Kerosene. |
| 37 | Lemons. | 778 | Starch, laundry. |
| 289 | Hosiery, silk. | 767 | Plate glass, mirror. |
| 414 | Butts, steel. | 333 | Rope, manila. |
| 501 | Paving blocks. | 382 | Plows, walking. |
| 180 | Sugar, raw. | 702c | Dinner sets. |
| 294 | Underwear, worsted. | 749 | Wood pulp. |
| 201c | Shoes. | 264 | Nainsook, muslin. |
| 305 | Spun silk. | 220 | Harness leather. |
| 770 | Garden hose. | 190c | Shoes. |
| 275 | Madras, woven. | 341c | Carpet yarn, jute. |
| 782 | Tobacco, smoking. | 410 | Machine bolts. |
| 433 | Pig iron. | 295c | Rayon. |
| 420 | Hatchet. | 35 | Apples. |
| 615 | Creosote oil. | 448 | Sheets, galvanized steel. |
| 194c | Shoes, men's. | 512 | Siding, red cedar. |
| 364 | Petroleum, crude. | 679 | Carpets, Brussels. |
| 45 | Milk. | 765 | Oil, neutral. |
| 754 | Barrel. | 100 | Crackers, soda. |
| 303c | Silk, spun. | 567c | Glass, window. |
| 605 | Calcium lime. | 205c | Shoes, women's. |
| 208 | Shoes, women's. | 682 | Linoleum, rug. |
| 314 | Dress goods, cotton. | 186 | Olive oil, edible. |
| 695 | Window shades. | | |
| | **GROUP 6 (SENSITIVITY 23.3–27.4 PERCENT)** | | |
| 771 | Rubbers, men's. | 743 | Book paper. |
| 768 | Rubber heels. | 407 | Steel barrels. |
| 683 | Linoleum, inlaid. | 240 | Overcoat, heavy. |
| 121 | Apricots, canned. | 122 | Cherries, canned. |
| 419 | Hammer. | 162 | Salmon, pink. |
| 689 | Oil cloths, table. | 412 | Stove bolts. |
| 350c | Coke. | 438 | Steel plates. |
| 124 | Pears, canned. | 446 | Steel sheets |
| 229 | Suitcase. | 408 | Steel billets. |
| 422 | Door knobs, metal. | 437 | Planes, jackplane. |
| 750 | Soda, bleached. | 90 | Milk, evaporated. |
| 499 | Firebrick. | 411 | Plow bolts. |

TABLE III.—*Sensitivity groups* Continued

| Code No. | Item | Code No. | Item |
|---|---|---|---|
| **GROUP 6 (SENSITIVITY 23.3-27.4 PERCENT)** | | | |
| 520 | Lumber, oak. | 311 | Dress goods, wool. |
| 546 | Copal, manila. | 647 | Menthol. |
| 447 | Auto body sheets. | 401 | Bar iron. |
| 680 | Carpets, Wilton. | 514 | Cypress. |
| 503 | Silica brick. | 125 | Pineapples, canned. |
| 688 | Oil cloths. | 269 | Filling sateen. |
| 231 | Collars, men's. | 160 | Coffee. |
| 230 | Traveling bags. | 764 | Cylinder oil. |
| 197 | Shoes, men's. | 153 | Poultry, fresh. |
| 123 | Peaches, canned. | 252 | Table damask. |
| 618 | Napthalene. | 159 | Coffee. |
| 359c | Gasoline. | 178 | Corn starch. |
| 247 | Topcoats. | 708 | Tumblers. |
| 452 | Steel, structural. | 553 | Putty. |
| 202c | Shoes, men's. | 134 | Beans, canned. |
| 424 | Nails, wire. | 291 | Underwear, cotton. |
| 38 | Oranges. | 639 | Camphor. |
| 163 | Salmon, canned. | 152 | Poultry. |
| 157 | Cocoa beans. | 692 | Pillowcases. |
| **GROUP 7 (SENSITIVITY 27.5-32.9 PERCENT)** | | | |
| 405 | Steel, sheet bars. | 93 | Bread. |
| 280 | Toweling, cotton. | 260 | Gingham. |
| 167 | Fish, salmon. | 356 | Fuel oil. |
| 164 | Fish, cod, canned. | 404 | Steel, merchant bars. |
| 288 | Hosiery, rayon. | 498 | Brick, common. |
| 562 | Doors, pine. | 327 | Burlap. |
| 617 | Logwood extract | 27c | Eggs. |
| 678 | Carpets, Axminster. | 525 | Lumber, poplar. |
| 30 | Eggs. | 547 | Pigments, red lead. |
| 309 | Dress goods, women's. | 745 | Tissue paper. |
| 22c | Poultry, live. | 306c | Silk yarn. |
| 338 | Twine, binder. | 365 | Petroleum, crude. |
| 429 | Pig iron. | 138 | Beans, string. |
| 526 | California redwood. | 249 | Pants, men's. |
| 292 | Underwear, cotton. | 427c | Pig iron. |
| 633 | Oil, palm, crude. | 774 | Soap. |
| 675 | Comforters, sateen. | 738 | Linseed meal. |
| 701 | Tablecloths. | 358 | Gasoline. |
| 510 | Lumber, fir. | 742 | Box board. |
| 250 | Men's work pants. | 310 | Flannel, wool. |
| 135 | Corn, canned. | 243 | Boys' suits, wool. |
| 513 | Lumber, chestnut. | 290 | Hosiery, silk. |
| 491 | Water closets. | 143 | Lamb, fresh. |
| 641 | Chlorine. | 144 | Mutton, dressed. |
| 40c | Hay | 313 | Dress goods. |
| 582 | Tar, pine. | 266 | Percale. |
| 461 | Wood screws. | 219 | Leather. |
| 504 | Drain tile, clay. | 409 | Steel bars. |
| 175 | Pepper, black. | 261c | Muslin. |
| 44 | Milk. | 480 | Copper sheet. |
| 242 | Shirts. | | |
| **GROUP 8 (SENSITIVITY 33.2-39.4 PERCENT)** | | | |
| 506 | Tile, hollow. | 672 | Blankets, cotton. |
| 403 | Reinforcing bars. | 221 | Leather, tanned. |
| 244 | Men's suits. | 316 | Overcoating. |
| 366 | Petroleum, crude. | 129 | Peaches, dried. |
| 766 | Neutral oil. | 656 | Ammonia, sulphate. |
| 591 | Acid, stearic, distilled. | 580 | Window sash. |
| 657 | Bones, ground. | 259 | Cotton flannel. |
| 258 | Cotton flannel. | 127 | Apricots, dried. |
| 493 | Radiator. | 478 | Copper rods. |
| 741 | Box boards. | 476 | Quicksilver, flask. |
| 94 | Bread. | 278 | Tire fabrics. |
| 50 | Seed, timothy. | 322 | Suitings. |
| 485 | Yellow brass tube. | 479 | Brass. |
| 287 | Hosiery, cotton. | 245 | Suits, serge. |
| 549 | Litharge, powdered. | 118 | Rice, clean. |
| 440 | Rivets, large $\frac{3}{8}$-inch. | 130 | Prunes, dried. |
| 270c | Sheeting, bleached. | 673 | Blankets, cotton. |
| 527 | Lumber, spruce. | 172 | Oleomargarine. |
| 674 | Blankets. | 524 | Lumber, ponderosa pine. |
| 696 | Sheets. | 747 | Wood pulp. |
| 332 | Cotton rope, awning. | 539 | Carbon black. |
| 182 | Tea, Formosa. | 486 | Brass wire. |
| 168 | Glucose, corn syrup. | 253 | Denims, cotton. |

TABLE III *Sensitivity groups* Continued

| Code No. | Item | Code No. | Item |
|---|---|---|---|
| **GROUP 8 (SENSITIVITY 33.2-39.4 PERCENT) Continued** | | | |
| 475 | Lead, pipe | 256 | Duck |
| 276 | Percale, print. | 91 | Milk, powdered. |
| 318e | Suitings. | 126 | Apples, evaporated |
| 451 | Steel strips. | 740 | Box board, chip |
| 209c | Raw silk. | 182 | Silver bar. |
| 86e | Cheese. | 477 | Yellow brass rods. |
| 222e | Leather. | 39 | Hay, alfalfa |
| 141e | Meat, beef. | 784 | Paraffin wax |
| **GROUP 9 (SENSITIVITY 39.5-47.5 PERCENT)** | | | |
| 709 | Tubs, galvanized iron. | 588 | Oil, red, oleic acid |
| 103e | Flour, wheat. | 12 | Calves. |
| 102 | Flour, rye. | 68e | Butter. |
| 691 | Pails, galvanized iron. | 357 | Gasoline. |
| 317 | Overcoating, wool. | 312 | Suiting. |
| 310 | Twine, Java sisal. | 611 | Copper sulphate. |
| 286 | Hosiery, cotton. | 54 | Potatoes, sweet. |
| 321 | Yarns, worsted | 634 | Palm oil. |
| 329 | Jute, raw. | 339 | Cotton twine. |
| 555 | Shellac. | 268 | Print cloths |
| 325e | Woolen yarn. | 517 | Lumber, gum. |
| 114 | Macaroni and spaghetti. | 773 | Soap flakes. |
| 431 | Pig iron. | 36 | Apples. |
| 277 | Ticking. | 55e | Potatoes, white. |
| 279 | Tire fabrics. | 284e | Cotton yarn. |
| 621 | Quebracho extract. | 49 | Flaxseed. |
| 257 | Duck. | 239 | Overalls, cotton. |
| 637 | Alcohol, ethyl. | 183 | Coconut oil, crude. |
| 552 | Linseed oil, raw. | 15e | Steers. |
| 110 | Beef, cured | 529 | Cypress shingles. |
| 151 | Veal, fresh. | 267 | Print cloths. |
| 98 | Oatmeal. | 20 | Lambs. |
| 174 | Peanut butter. | 149 | Mess pork. |
| 166 | Fish, mackerel. | 24e | Cotton, Middling. |
| 215 | Goatskins. | 528 | Lumber, cedar shingles. |
| 148 | Pork, hams. | 776 | Powdered soap |
| 471 | Babbit metal. | 519 | Lumber, maple |
| 281e | Cotton yarn. | 58 | Potatoes, white |
| 505 | Floor tiles. | 473 | Lead, pig |
| 272e | Sheeting. | 42 | Hops. |
| 255 | Drillings, cotton. | 265 | Osnaburg |
| **GROUP 10 (SENSITIVITY 47.9-81.8 PERCENT)** | | | |
| 161 | Copra, dried. | 185 | Cottonseed oil. |
| 13e | Cows. | 522 | Lumber, pine |
| 248 | Pants, boys' wool | 181 | Tallow, edible. |
| 184 | Vegetable oil, corn. | 116 | Corn meal. |
| 134 | Pipe, cast-iron. | 5 | Rye. |
| 748 | Wood pulp, unbleached | 65e | Wool. |
| 4 | Oats. | 211 | Cowhides. |
| 47 | Seed, alfalfa. | 631 | Tallow. |
| 349 | Coke. | 46 | Peanuts. |
| 355 | Fuel oil. | 328 | Hemp, manila. |
| 511 | Lumber, pine, lath. | 484 | Tin, pig. |
| 488 | Zinc, pig. | 736 | Millfeed, bran |
| 145 | Bacon. | 551 | China wood oil |
| 59e | Wool. | 554 | Rosin, yard basis. |
| 516 | Lumber, fir | 17e | Hogs. |
| 487 | Copper wire | 665 | Tankage, ton. |
| 737 | Cottonseed meal. | 739 | Millfeed |
| 8e | Wheat. | 212e | Hides, steers. |
| 19e | Sheep. | 445 | Steel, scrap. |
| 173 | Oleo oil. | 214 | Calfskins. |
| 1 | Barley, malting. | 51 | Tobacco, leaf. |
| 472 | Copper, ingot. | 146 | Pork, cured. |
| 188 | Vegetable oil, soybean. | 2e | Corn. |
| 515 | Lumber, fir. | 48 | Seed, clover |
| 216 | Kips. | 762 | Asbestos pipe covering. |
| 645 | Glycerin. | 470 | Antimony |
| 483 | Solder. | 147 | Pork, cured |
| 52 | Beans, dried. | 217 | Sheep pelts. |
| 170 | Lard. | 115 | Corn meal |
| 150 | Pork, hams. | 113 | Hominy grits. |
| 335 | Sisal. | 751e | Rubber, crude. |
| 187 | Peanut oil, crude. | | |

TABLE IV.—*Annual price data—1913–37*

FREQUENCY GROUP INDEXES—1926–29=100

| Group No. | 1913 | 1914 | 1915 | 1916 | 1917 | 1918 | 1919 | 1920 | 1921 | 1922 | 1923 | 1924 | 1925 | 1926 | 1927 | 1928 | 1929 | 1930 | 1931 | 1932 | 1933 | 1934 | 1935 | 1936 | 1937 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I | 64 9 | 67 1 | 76 1 | 94 7 | 105 2 | 124 0 | 118 5 | 128 5 | 114 4 | 97 2 | 103 7 | 104 8 | 101 7 | 101 0 | 100 2 | 99 7 | 98 9 | 97 7 | 96 4 | 93 1 | 91 6 | 94 2 | 95 3 | 95 8 | 98 1 |
| II | 58 0 | 58 6 | 65 5 | 80 1 | 100 2 | 116 1 | 117 2 | 134 1 | 115 3 | 99 8 | 105 1 | 104 2 | 101 5 | 101 4 | 100 3 | 99 7 | 98 7 | 95 9 | 90 5 | 85 2 | 83 2 | 87 6 | 86 6 | 87 7 | 92 5 |
| III | 71 7 | 75 1 | 110 7 | 151 9 | 180 1 | 191 2 | 173 0 | 177 7 | 123 4 | 99 8 | 105 1 | 103 9 | 101 9 | 103 7 | 100 4 | 98 9 | 97 0 | 95 4 | 90 0 | 82 1 | 81 7 | 87 4 | 87 3 | 87 3 | 92 0 |
| IV | 57 8 | 58 0 | 68 2 | 87 1 | 106 2 | 123 4 | 121 1 | 147 4 | 111 4 | 98 8 | 101 2 | 104 1 | 103 4 | 102 9 | 99 2 | 99 7 | 98 4 | 94 2 | 84 2 | 76 6 | 77 7 | 84 6 | 82 5 | 84 8 | 90 2 |
| V | 63 9 | 64 7 | 72 1 | 95 0 | 119 2 | 136 5 | 130 8 | 157 6 | 110 6 | 103 2 | 114 4 | 110 5 | 109 5 | 104 4 | 100 9 | 98 0 | 97 1 | 89 8 | 79 3 | 70 6 | 72 2 | 80 3 | 80 1 | 80 7 | 85 9 |
| VI | 66 4 | 63 0 | 66 6 | 92 6 | 124 5 | 137 0 | 132 2 | 175 9 | 106 0 | 102 6 | 119 9 | 108 7 | 106 2 | 102 5 | 100 3 | 98 8 | 98 5 | 91 6 | 80 7 | 69 8 | 74 6 | 82 2 | 81 8 | 82 6 | 91 3 |
| VII | 72 1 | 69 0 | 71 9 | 95 7 | 128 2 | 151 3 | 146 6 | 171 6 | 108 5 | 100 7 | 111 2 | 105 6 | 105 7 | 101 8 | 99 4 | 99 8 | 98 9 | 90 0 | 76 8 | 68 3 | 71 2 | 78 5 | 79 0 | 80 5 | 88 7 |
| VIII | 70 2 | 66 6 | 70 6 | 93 2 | 130 3 | 149 1 | 143 4 | 157 2 | 93 4 | 97 3 | 107 8 | 105 5 | 107 3 | 101 9 | 98 0 | 99 6 | 100 7 | 88 0 | 71 3 | 56 4 | 63 0 | 72 7 | 76 1 | 78 3 | 87 1 |
| IX | 70 7 | 68 6 | 71 4 | 90 0 | 123 4 | 141 8 | 154 6 | 160 6 | 83 1 | 94 0 | 99 7 | 103 8 | 113 2 | 105 4 | 96 3 | 98 7 | 99 7 | 82 2 | 61 5 | 47 7 | 57 2 | 70 6 | 75 0 | 78 5 | 85 8 |
| X | 72 8 | 71 6 | 72 7 | 88 4 | 118 9 | 134 8 | 144 4 | 139 9 | 79 3 | 87 2 | 91 8 | 93 7 | 108 0 | 100 6 | 99 2 | 101 2 | 98 9 | 76 8 | 56 5 | 44 7 | 50 8 | 62 2 | 69 2 | 71 0 | 77 8 |
| X-a | 74 4 | 72 5 | 71 2 | 91 6 | 119 9 | 131 8 | 146 5 | 139 5 | 77 9 | 86 6 | 92 3 | 92 9 | 110 1 | 105 7 | 98 8 | 99 2 | 96 7 | 73 2 | 53 9 | 43 3 | 47 1 | 55 3 | 63 1 | 66 0 | 71 1 |
| X-b | 71 4 | 71 0 | 75 4 | 84 9 | 118 0 | 140 1 | 142 8 | 141 5 | 81 8 | 88 7 | 91 4 | 95 6 | 105 9 | 94 4 | 100 0 | 104 2 | 102 0 | 81 9 | 60 2 | 47 8 | 56 1 | 72 7 | 78 2 | 78 5 | 87 5 |

FREQUENCY SLOPE—1926–29=0—PERCENT PER GROUP

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $m_0$ | 1 71 | 86 | −1 23 | −1 24 | .97 | 90 | 2 09 | 1 19 | −4 33 | − 60 | −.65 | − 55 | 87 | .07 | − 30 | .07 | .18 | −2 26 | −5 27 | −7 50 | −5 57 | −3 78 | −2 80 | −2 54 | −1 73 |

BUREAU OF LABOR STATISTICS WHOLESALE PRICE INDEX—1926–29=100

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 72 1 | 70 3 | 71 8 | 88 3 | 121 3 | 135 6 | 143 1 | 159 4 | 100 8 | 99 8 | 103 9 | 101 3 | 106 9 | 103 3 | 98 5 | 99 8 | 98 4 | 89 2 | 77 4 | 66 9 | 68 0 | 77 3 | 82 6 | 83 4 | 89 1 |

FEDERAL RESERVE BOARD INDEX OF INDUSTRIAL PRODUCTION—1926–29=100

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| F. R. B. | [1] 63 | [1] 51 | [1] 65 | [1] 83 | [1] 85 | [1] 80 | 75 | 78 | 60 | 77 | 91 | 86 | 94 | 97 | 90 | 100 | 107 | 87 | 72 | 58 | 68 | 71 | 84 | 95 | 99 |

[1] Extrapolated from index of *Standard Statistics Co.*

TABLE IV–A.—*Annual price data—1913–26*

[11 war items eliminated]

FREQUENCY GROUP INDEXES 1926–29=100

| Group No. | 1913 | 1914 | 1915 | 1916 | 1917 | 1918 | 1919 | 1920 | 1921 | 1922 | 1923 | 1924 | 1925 | 1926 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I | 63 4 | 63 7 | 66 6 | 81 3 | 94 1 | 113 5 | 112 1 | 121 6 | 110 1 | 93 1 | 102 1 | 103 9 | 101 4 | 101 0 |
| II | 57 3 | 57 8 | 61 8 | 74 3 | 93 7 | 109 7 | 113 2 | 131 3 | 115 5 | 100 5 | 106 1 | 105 0 | 102 0 | 101 4 |
| III | 68 8 | 69 2 | 75 9 | 100 0 | 130 7 | 140 5 | 138 9 | 150 5 | 119 7 | 102 5 | 107 9 | 107 4 | 104 4 | 103 7 |
| IV | 57 8 | 57 0 | 64 8 | 84 0 | 104 8 | 122 2 | 120 0 | 147 1 | 111 1 | 98 9 | 104 0 | 104 0 | 103 3 | 102 9 |
| V | 63 3 | 62 9 | 66 2 | 89 4 | 115 0 | 132 6 | 133 3 | 162 3 | 112 6 | 104 2 | 112 4 | 109 8 | 109 5 | 104 4 |
| VI | 65 6 | 62 3 | 65 8 | 91 4 | 123 0 | 135 2 | 130 6 | 173 7 | 104 7 | 102 3 | 119 5 | 108 4 | 105 9 | 102 5 |
| VII | 71 9 | 68 8 | 71 7 | 95 3 | 127 7 | 150 7 | 146 0 | 171 0 | 107 9 | 100 7 | 110 6 | 105 5 | 106 1 | 101 8 |
| VIII | 70 6 | 67 0 | 71 0 | 93 6 | 130 5 | 149 8 | 144 1 | 159 1 | 94 3 | 97 8 | 107 8 | 105 8 | 108 3 | 101 9 |
| IX | 71 2 | 69 0 | 72 0 | 91 1 | 124 6 | 142 8 | 155 3 | 161 5 | 84 4 | 95 2 | 101 1 | 104 6 | 113 8 | 105 4 |
| X | 72 2 | 71 0 | 72 0 | 87 6 | 117 8 | 133 5 | 143 1 | 138 6 | 78 6 | 86 5 | 92 1 | 94 2 | 107 7 | 100 6 |
| X-a | 73 3 | 71 4 | 70 1 | 90 3 | 118 1 | 129 8 | 144 3 | 137 5 | 76 7 | 85 4 | 93 0 | 93 8 | 109 8 | 105 7 |
| X-b | 71 0 | 70 7 | 75 1 | 84 5 | 118 0 | 139 5 | 142 1 | 140 8 | 81 4 | 88 3 | 91 0 | 95 1 | 105 4 | 94 4 |

FREQUENCY SLOPE—1926–29=0—PERCENT PER GROUP

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $m_1$ | 2 12 | 1 63 | 1 13 | 1 30 | 2 92 | 2 54 | 3 19 | 1 81 | −4 06 | −.91 | −.90 | −.77 | .81 | −.06 |

BUREAU OF LABOR STATISTICS WHOLESALE PRICE INDEX—1926–29=100

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 72 1 | 70 3 | 71 8 | 88 3 | 121 3 | 135 6 | 143 1 | 159 4 | 100 8 | 99 8 | 103 9 | 101 3 | 106 9 | 103 3 |

FEDERAL RESERVE BOARD INDEX OF INDUSTRIAL PRODUCTION—1926–29=100

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| F. R. B. | [1] 63 | [1] 51 | [1] 65 | [1] 83 | [1] 85 | [1] 80 | 75 | 78 | 60 | 77 | 91 | 86 | 94 | 97 |

[1] Extrapolated from index of *Standard Statistics Co.*

# APPENDIX 3.—EFFECT OF DIFFERENTIATION UPON RIGIDITY AND AMPLITUDE OF PRICE MOVEMENT [1]

The price behavior of trade-marked and standardized products [2] is here examined with a view to discovering the relationship, if any, between product differentiation and the flexibility and sensitivity of prices. For this purpose, the relationship between frequency of price change and amplitude of price movement is here considered for the standard and trade-marked goods which are included in the Bureau of Labor Statistics wholesale price series.

In general, trade-marked or highly differentiated products tend to have highly rigid price structures. When the trade-marked products included in the Bureau of Labor Statistics series are grouped on the basis of frequency of price change according to the classification given in appendix 2, table II, one-half of all the price series for trade-marked products are to be found in groups I and II. Not a single trade-marked or highly differentiated commodity is to be found in the three most flexible price groups—groups VIII to X, inclusive.

In order to see whether the relationship between rigidity and amplitude of price movements is the same for trade-marked and for standard products, prices whose flexibility is similar are compared on the basis of sensitivity. For this purpose the average price [3] of trade-marked, semidifferentiated and standard products falling within each of the frequency groups in appendix 2, table II, which included any trade-marked products, were computed, group by group, for each year during the period 1926 to 1936.

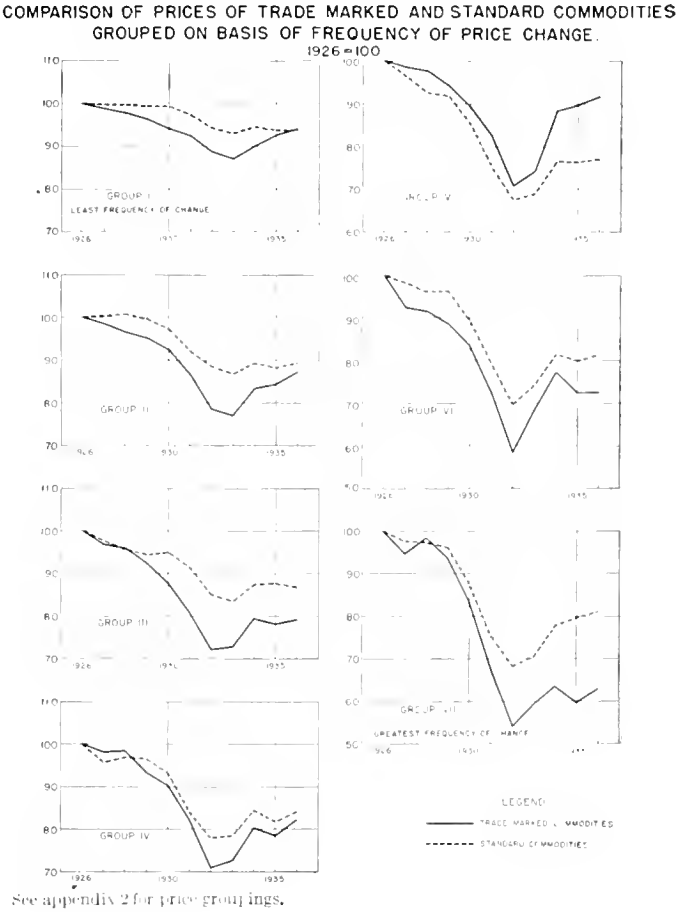
This computation reveals a very striking difference in behavior between the prices of standard and of trade-marked products of approximately the same degree of flexibility. The chart illustrates this difference. In each case the price of trade-marked products shows a significantly greater amplitude of movement than does the price of the standard products of the same frequency of price change. The trade-marked products consistently show a more rapid decline during the depression and a sharper rise subsequently than did the standard products in the same price group. Table I expresses this comparison in terms of percentage decline between 1929 and 1932 and percentage rise from 1932 to 1936. In every group but one, trade-marked products show a significantly sharper price decline during the depression,

TABLE I.—*Comparison of standard and trade-marked commodities in each price frequency group, 1929–32, 1932–36.*

| Frequency Group | Percent decline 1929 to 1932 | | Percent rise 1932 to 1936 | |
|---|---|---|---|---|
| | Trade-marked | Standard | Trade-marked | Standard |
| I | 8.0 | 5.3 | 6.0 | −0.1 |
| II | 17.5 | 11.1 | 11.1 | 3.8 |
| III | 22.0 | 10.0 | 9.8 | 2.2 |
| IV | 23.9 | 19.2 | 15.8 | 8.0 |
| V | 24.7 | 20.4 | 20.5 | 13.7 |
| VI | 34.0 | 27.4 | 24.9 | 16.3 |
| VII | 42.3 | 20.0 | 16.5 | 18.6 |
| Mean | 24.6 | 18.3 | 16.1 | 8.5 |

Source: Appendix 2 table I

and in the remaining group the difference is small. Taking the average of the seven groups, trade-marked products declined 24.6 percent as against 18.3 percent for standard products. During the rise, behavior was even more sharply distinguished. The rise for trade-marked products was substantially greater than for




See appendix 2 for price groupings.

[1] Appendix 3 was prepared by Saul Nelson.

[2] With few exceptions, standardized commodities are those classified as standard and trade-marked commodities are those classified as unique or differentiated, in appendix 2, table I, column 15.

[3] Geometric averages were used.

standard products in every group but one. The average for the seven groups showed a rise of 16.1 percent for trade-marked articles as against only 8.5 percent for standard products.

Perhaps the most striking feature of this relationship is the consistency with which it expresses itself. This consistency manifestly precludes any possibility that purely chance factors are operating to cause this difference in behavior.

It is important to emphasize that, even for trade-marked products, a marked correlation exists between frequency of change and amplitude of movement. Table I shows that the decline in price experienced by trade-marked products during the depression increased sharply and regularly with frequency of change. In each case, however, the extent of the decline was of approximately the same order as that suffered by standard commodities whose apparent flexibility, judged only by frequency of price change, was considerably greater. Trade-marking thus appears to carry with it the power to postpone but not to avoid the making of price adjustments to meet changing competitive conditions. The rigidity displayed by the prices of trade-marked articles and that of the prices for standard commodities thus seems to be, to a degree, different in kind.

If the price of a standard product changes but rarely, it is probable that the total amplitude of its fluctuations is also narrow. If, on the other hand, comparatively few price changes are recorded for trade-marked commodities, it is still entirely possible that it will respond fully, though with some delay, to changing general economic conditions. This behavior suggests that the ability of producers of standard products to control the frequency of price change is associated with the ability to restrict actual price fluctuations within narrow limits. Trade-marking, on the other hand, appears to permit stability of price quotations in the absence of the ability to limit the amplitude of price fluctuations.

# APPENDIX 4.—PUBLIC UTILITY PRICES [1]

The statistical information available in the public utility field leaves much to be desired. While it has been possible to collect selling price series for most of the major public utilities, these series for the most part relate only to the country as a whole or to a sample thereof, and thus possess the frailties that characterize any over-all average. In some cases it has been impossible to obtain even a single price series for the entire period of years. In other cases, notably the telephone industry, it has been possible to secure an index for only a single state or area; and for one important industry, motor transport, no worthwhile data are available. Satisfactory series for water transportation are also lacking. Moreover, it has been impossible to obtain adequate data for certain divisions of the utility markets; thus the electric, gas and telephone data relate only to the residential sales of those services. In the case of certain of the measures employed, the accuracy of the data themselves is only approximate as a measure of average price behavior. This is especially true of railroad freight rates.

There is a further inherent deficiency in virtually all of the price statistics presented. The unit of service chosen for such industries as freight transportation or residential telephone service, is not a constant during a period of time. Quality factors, such as speed, convenience, safety and regularity of service are inevitably modified, so that precisely the same thing is not being purchased over a period of years. While it has been impossible to make allowance for changes of this sort in the price series which are presented, it should be recognized that an influence is operative which in many cases amounts to a reduction in price in that a better quality of service is obtained. Changes in quality, however, are usually gradual and of significance only over a period of years rather than during a short-run cyclical period of price fluctuation. Moreover, the same criticism may be advanced toward a large number of price data included in such measurements as the wholesale price and cost of living series of the Bureau of Labor Statistics, with the result that when different price series are compared there is a tendency for errors to be mutually compensatory.

Table I gives in summary the results for each series for 1929, 1932, and 1936.

Table II gives an index of freight rates for 1900 to 1936. To our knowledge there has never been published an accurate index of the freight rate level. It has been customary to employ the revenue per freight ton-mile as a crude approximation of movements in the level of freight rates, but this index is subject to error in several respects. The changes in average revenue per ton-mile may result not only from adjustments in freight rates, but also from changes in the average distance for which commodities are transported,[2] and shifts in the composition of traffic between high and low revenue commodities. Either an increase in the averge length of haul, or a greater proportion of low revenue traffic will tend to reduce the average revenue per ton-mile. A fourth and probably less important variable in the situation is the changing distribution of originated traffic between different sections of the country. Inasmuch as the rate level is not uniform through the United States, an increase in the relative proportion of low rate eastern territory traffic, for example, would operate to lower the revenue per ton-mile.

An adjustment has therefore been prepared which involves a partial correction for two of these factors, the change in length of haul and the shifting commodity composition of traffic. Adjustment for changes in length of haul was made as follows: (1) The average distance of haul for all tonnage carried by the railroad network (i. e., by the railroads treated as one system) was tabulated for the period 1900–1936; (2) A composite progression rate schedule, showing the general effect of distance on the amount charged, was obtained from the Interstate Commerce Commission.[3] This progression rate schedule is not precisely accurate for any rate area, commodity group, or year, but is thought to be roughly representative of the effect of distance upon the level of charges.[4]

From the composite rate schedule a hypothetical total revenue for each length of haul was then computed. Inasmuch as freight rates progress in blocks or steps each comprising a number of miles, it was necessary to interpolate to find a charge for the average haul for each distance in (1) above. It was assumed that for each rate-distance block the rate was centered at the midpoint of the block. (3) This hypothetical revenue, divided by the average length of haul in each year, provided a revenue per ton-mile for each year. (4) This annual revenue per ton-mile was then indexed,

[1] Appendix 4 was prepared by John D. Sumner, assisted by R. G. Lorenz.

[2] The freight rate is typically based upon a tapering principle, by which the total charge increases much more slowly than does the distance of carriage.

[3] The Interstate Commerce Commission should not be held responsible for the methods employed in the computation of this index, although members of the staff were generous with advice and suggestions.

[4] The representativeness of the schedule is probably less for pre-war than for post war years.

using 1926 as a base. The index thus obtained constituted a correction factor showing roughly the extent to which, assuming no changes in the level of freight rates as such, or in the composition of traffic, actual revenue per ton mile would have changed, due solely to changes in the average length of haul.

Adjustments for changes in the commodity composition of traffic hauled were computed in the following manner: The tonnage originating on Class I railroads was tabulated, broken down according to the six-fold classification of the Interstate Commerce Commission. This classification includes carload shipments of agricultural, animal, mineral, forest and manufacturing and miscellaneous products and less-than-carload freight. The percentage of each commodity group to the total, was then computed and a ton-mile revenue, constant for all years, was assumed for each of the commodity groups. These revenue data, suggested by the Bureau of Statistics of the Interstate Commerce Commission, are believed to be fairly representative of differences between the commodity groups. The assumed ton-mile revenues were as follows: Products of agriculture, 1.142 cents; products of animals, 1.958 cents; products of mines, .802 cent; products of forests, .853 cent; manufacturing and miscellaneous, 1.369 cents; and less-than-carload, 4.155 cents. Using the percentage composition of traffic for each year for weighting purposes, a theoretical average revenue per ton-mile was computed to take account of changes in the relative importance of each major commodity group. This revenue per ton-mile was then indexed, using 1926 as a base. This index provides a correction factor showing the extent to which, assuming no change in the level of freight rates or length of haul, average revenue per ton-mile might be expected to vary, due to changes in the composition of traffic.

The two adjusted indexes were then multiplied together to obtain a combined correction factor. The actual revenue per ton-mile, tabulated from the annual *Statistics of Railways in the United States*, was then divided by the correction factor for each year and the result indexed on a 1926 basis.

Several objections can be brought against each of these two adjustments.

Against the adjustment for length of haul, the following objections may be made:

(*a*) When there is a shift in the relative importance of the major commodity groups, there is usually an accompanying change in the average length of haul. If one makes adjustment for these shifts in commodity composition of traffic, this adjustment must be made on the basis of the average revenue per ton-mile, which in turn partially reflects the average haul of that commodity. A partial duplication results from making another adjustment for changes in the average length of haul. The net result of this error may tend either unduly to increase or decrease the index.

(*b*) The average length of haul during the period was increased in part as a result of changes in the method of reporting traffic. Greater use of through billing and increases in the dimensions of individual railroads have contributed to an apparent increase in haul which did not actually take place. That is, a shipment going from point A to point B may previously have been counted as two originated shipments on account of transfer from one railroad to another, but later is counted as one shipment. Informed sources consider this fictitious increase to be of minor importance.

(*c*) The rate schedule is not a straight-line progression, but rises more sharply on the short hauls, and approaches the horizontal on the long hauls. The average haul is around 300 miles. At this point, the rise in revenue per marginal ton-mile is less sharp than at shorter hauls. In recent years the lengthened haul is due largely to loss of short-haul traffic to the trucks. Obviously, this means a greater shrinkage in average revenue per ton-mile than can be compensated for by corrections for the lengthened haul at the 300-mile point. This influence is somewhat counterbalanced by a rising length of haul due to the increase of very long hauls, where the rise in marginal revenue per ton-mile is even smaller than at 300 miles.

(*d*) The assumed progression scale of freight charges, while believed to be substantially representative of the true progression, is not for any year, nor for all rate areas, identical with it.

The adjustment for the changing commodity composition of traffic is subject to the following major defects:

(*a*) The adjustment made is incomplete in that it was impossible to correct for shifts in the relative importance of high and low revenue freight *within* each of the six major commodity groups. A relative increase in the tonnage of manufactured and miscellaneous products, for example, tends to increase actual revenue per ton-mile for all freight traffic because this group of commodities moves at a higher than average revenue per ton-mile. This *apparent* rise in freight rates is eliminated by the correction factor described above, but only to the extent that the relative increase of traffic in manufactured products did not occur in products *within* that group which were carried at a higher (or lower) revenue per ton-mile than the assumed average of the manufactured products as a whole. Thus, if the increase in major group tonnage is solely due to an increase of high revenue commodities within the group, the correction is incomplete because it does not *sufficiently* deflate the actual revenue per ton-mile of all freight traffic. The rise in the latter resulted partly from an increase in the relative importance of a

high revenue group—manufactured products; this rise the correction factor eliminates. In part, however, the rise was caused by an increase of manufactured products transported at a revenue per ton-mile higher than the assumed average of their group; this increase is not eliminated by the correction factor, and, in view of the inadequacy of available data, cannot be.

It is difficult to judge the quantitative importance of this factor. While no correction can be made for the changes within each major commodity category, these shifts are undoubtedly not all in the same direction. In consequence the errors offset one another to some extent. It is improbable, however, that changes in the composition of each of the major categories of railroad traffic, due both to the evolution of the national economy and to the development of rival forms of transportation, are sufficiently random in character for the effects to cancel out entirely

(*b*) Originating tonnage of various commodities is not necessarily in the same proportion as the ton-miles of those commodities. The effect of this is to assign greater weight in the index to the commodity groups with the shorter hauls (and hence higher revenues per ton-mile) than would be the case if adequate data were available for the ton-mile significance of each group.

(*c*) The commodity statistics were taken from the data for Class I railroads only. If Class II and III railroads were included, the result would undoubtedly be somewhat different. Class II and III railroads probably originate and carry a larger proportion of bulky, low revenue traffic. But they carry only a small proportion of the total traffic in any case, and cannot affect the results substantially.

The quantitative significance of these various defects in the adjusted index cannot be accurately determined from existing data. To a certain extent the direction of error seems clear. There seems little doubt, for example, that the length of haul has increased in part by virtue of the loss of short-haul traffic to motor trucks, and that the imperfect adjustment in this respect tends to overstate declines in rate levels. The opposite effect may result from inadequate allowances for other imperfections described above. All that is claimed for this adjusted index is that it shows the direction of error in the unadjusted revenue per ton-mile index of freight rates, and gives some indication of the probable extent of that error. Moreover, its behavior seems to show more accurately the effect of the major freight rate level cases decided by the Interstate Commerce Commission during the 1930's[5] than does the unadjusted index of average revenue per ton-mile.

The use of an average freight rate index necessarily obscures the highly divergent behavior of thousands of particular class and commodity rates which together constitute the rate structure. Among agricultural commodities, for example, a striking contrast exists between the generally stable behavior of livestock rates, and rates on cotton which declined over 40 percent from 1926 to 1935.[6] As stated by the Interstate Commerce Commission in 1933, "The lowering of rates, however, has not been uniform, many rates not having been reduced at all since 1922, and others having been reduced as much as 50 percent or more." [7]

Table III shows revenue per passenger-mile and number of passenger-miles for class I railroads, 1911–36. Revenue per passenger mile is believed to be a fairly accurate index of passenger rates. Changes in rates are not perfectly measured by this index. Changes in the distribution of traffic between regular and special-rate travel, between low and high rate areas, and related changes, as well as changes in rates, affect the average revenue per passenger-mile.

Table IV presents an index of fares from 1913, and of fares and volume of traffic from 1917 to 1936, for street railways.

Table V shows indexes of the residential price of manufactured gas, 1913–36, and the volume of residential consumption, 1929–36. The series is not entirely homogeneous. For the period 1923–36, inclusive, it represents data published by the Bureau of Labor Statistics,[8] which are based on the cost of 30.6 and 10.6 therms, respectively, of gas in 25 cities. This thermal basis of prices insures accuracy in the sense that virtually no change is involved in the quality of the service purchased. The amount, 30.6 therms, is deemed characteristic of the use of gas for cooking and water-heating purposes, while 10.6 therms is typical of range use only. To this index has been spliced an earlier index of the Bureau of Labor Statistics of the cost of 3,000 cubic feet of manufactured gas for household use in selected cities.[9] The behavior of the spliced series in overlapping years is so similar that there seems to be little inaccuracy involved in the combination of the two.

Table VI presents data on local telephone rates and use. Unfortunately, there is no available index of telephone rate behavior for the entire United States; an index of local telephone rates for the State of Wisconsin has therefore been used. Prepared from data supplied by the Wisconsin Public Service Commission, it represents the price in some 55 Wisconsin cities, weighted

[5] *The 15 Percent Case*, 1931, 178 I. C. C. 539, 179 I. C. C. 215, and 191 I. C. C. 361, permitted emergency increases in freight charges beginning Jan. 4, 1932. Again, in *Emergency Freight Charges, 1935*, 208 I. C. C. 4 and 215 I. C. C. 439 (1936), the Interstate Commerce Commission permitted emergency increases in freight rates until December 31, 1936. The effects of later adjustments, of course, are not relevant to this record which ends with 1936.

[6] U. S. Department of Agriculture, *Agricultural Statistics*, 1936, p. 407.

[7] General Rate Level Investigation, 1933, 195 I. C. C. 5 (1933), p. 67.

[8] *Changes in the Retail Price of Gas, 1923–36*, Bulletin 628, Washington, 1936.

[9] Bureau of Labor Statistics, bulletins on *Retail Prices*, annual.

according to population and class of residential telephone service. The index, while representing rate behavior in only one State, is believed to be fairly representative, particularly for the period since the War. The rate behavior shown in this index checks with the following comment in the congressional report on communications companies:

> From information available, the trend of rate changes of all telephone companies during the 11-year period from January 1, 1922, to December 31, 1932, was upward, in the case of local exchange rates. Most of the increases, however, occurred during the first 5 years of this period, or during the years 1922 to 1926, inclusive. An upward movement in toll rates also occurred during the years 1922 to 1926, inclusive, followed by some reductions. It is significant that, since 1929, rates, for the most part, have been stationary * * *.
>
> Approximately 1,034 rate changes were made by the 22 large regional telephone companies of the Bell System during the 11-year period from January 1, 1922, to December 31, 1932, 797 of the changes affecting local rates and 237 of the changes affecting toll rates. Approximately 501 of the changes affecting local rates were in the nature of increases and approximately 296 were reductions. Of the 237 changes affecting toll rates approximately 83 were in the nature of increases and 154 were reductions. Thirty-seven of the rate reductions were involuntary.
>
> The effect of these rate changes was an upward revision of rates, as hereinbefore pointed out with reference to most telephone companies, increases having been accomplished principally during the years 1922 to 1926, inclusive.[10]

A further check was obtained by examining the annual reports of the American Telephone & Telegraph Co. for the years 1930 to 1934, inclusive. If one takes account of all the rate reductions referred to in these reports and includes as reductions all cases referred to as pending before courts or commissions, the resultant reduction amounts to less than 2 percent of the total operating revenues of the Bell System in 1934.

A sample index of pipe line rates on crude petroleum is presented in table VII. The index is based on the rates charged by the Sinclair Pipe Line Co. and its predecessor companies between points in Oklahoma and Kansas in the mid-continent field to Whiting (Chicago refining district), Wood River (St. Louis district), and Cleveland. The rates to these points have been combined in a simple arithmetic average. While restricted in its composition, the index is believed to be fairly representative of pipe line rate behavior from the important mid-continent field to northeastern points. A similar, but somewhat more inclusive, tabulation was employed by the Federal Trade Commission in 1927.[11] There seems to be a high degree of uniformity in the movement of pipe line rates on crude petroleum. The index presented, however, is not representative of the movement of crude oil from the Gulf Coast to eastern refining points by waterway shipment, nor is it necessarily representative of pipe line rates in the California and other producing areas.

The data on the price of electricity presented in tables VIII and IX represent the average cost of 25, 100, and 250 kilowatt-hours in selected cities; the Federal Power Commission deems these amounts representative of the use of electricity for lighting and small appliances, plus refrigeration and for these two plus cooking, respectively.[12] The data for 1924–1936 are taken from the Commission's study of rate trends in 132 cities of 50,000 or more population.[13] To these price series have been spliced data drawn from a study by Mr. W. G. Vincent [14] of rate trends in the 51 cities included in an index formerly compiled by the Bureau of Labor Statistics.[15] The methods employed in Mr. Vincent's study are said to be identical with those used by the Federal Power Commission.[16] While the number of cities is smaller, this study includes approximately 80 percent of the population covered in the report of the Commission. The latter investigation shows a somewhat sharper downward trend in the overlapping years 1924–36 than does the Vincent study.

The index of the price of 25 kilowatt-hours is applicable to the largest number of residential users, although due to the promotional character of electric rate structures, it is a less sensitive index than those for 100 and 250 kilowatt-hours. Each of these average price indexes conceal many variations in rate behavior.[17] During the 1930's the reductions in residential rates appear to have been greater than those for either commercial or industrial power.[18]

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[10] 73d Cong., 2d sess., H. R. 1273, part III, No. 1, Washington, 1934, pp. 932 to 933.

[11] *Petroleum Industry, Prices, Profits, and Competition*, 70th Cong., 1st sess., S. Doc. 61, Washington, 1928, pp. 36, et. seq.

[12] *Trends in Residential Rates*, Washington, 1937, p. 21.

[13] *Ibid.*, p. 21. These cities contain a population of 37,533,000—88 percent of the population of cities of 50,000 or more inhabitants, and 46 percent of the urban population in communities of 2,500 or more inhabitants.

[14] "Rate Reductions," *Edison Electric Institute Bulletin*, June 1936, p. 217. Mr. Vincent is a vice president of the Pacific Gas and Electric Company.

[15] The Bureau now publishes in its retail price bulletins the price of specified typical amounts of electricity in selected cities. The older index was based upon the price of varying most popular consumption amounts of electricity. Inasmuch as electricity rates vary with consumption volume, this method is inadequate as a measure of rate changes only.

[16] The average is weighted according to the population of the cities in 1930; their total population in that year approximated 30,000,000. Three cities were omitted, 1906–16. "In order to determine the trend of domestic rates over a long period I secured for each of the 51 cities listed * * * the amount charged in that city for the same monthly consumption (domestic) used by the Federal Power Commission in its rate survey and under the same specifications, as of Jan. 1 of each year * * *." W. G. Vincent, *op. cit.* The data were secured directly from the companies, p. 224.

[17] A careful measurement of price reductions for specified quantities of electricity from 1930 to 1933 is presented by L. G. Cannon and D. F. Estes, "The Trend of Electric Utility Rates: 1930–33," *Journal of Land and Public Utility Economics*, November 1934, p. 359. The material presented in this article shows reductions of 4.6, 6.4, and 8.8 percent in the cost of 25, 50, and 100 kilowatt-hours, respectively, of residential consumption. Reductions in the cost of 100 kilowatt-hours ranges from no change to as high as 30 percent (Delaware) in the various States.

[18] In the commercial or small power market reductions were 5.3, 6.3, and 4.6 percent for 145, 1,440, and 4,500 kilowatt-hours, respectively. In the case of industrial or large light and power, the decreases were 2.1, 3.2, and 4.2 percent for quantities of 7,200, 48,600, and 432,000 kilowatt-hours, respectively. Again there was a great deal of divergence in rate behavior between the several States. *Ibid.*

Table X shows postal rates from 1919 to 1936 and volume of postal matter carried from 1927 to 1936.

Table XI shows for scheduled air transport revenue per passenger-mile, passengers, and passenger-miles, 1926–36.

TABLE I.—*Percent change in price and consumption of selected public utility services, 1929, 1932, 1936* [1]

[1929=100]

| Type of service | Index of price | | | Index of consumption | | |
|---|---|---|---|---|---|---|
| | 1929 | 1932 | 1936 | 1929 | 1932 | 1936 |
| Railroad freight | 100.0 | 101.9 | 96.2 | 100.0 | 52.3 | 75.8 |
| Railroad passenger | 100.0 | 79.0 | 65.5 | 100.0 | 54.6 | 72.1 |
| Street railways | 100.0 | 103.3 | 102.9 | 100.0 | 68.8 | 69.9 |
| 10.6 therms manufactured gas | 100.0 | 99.8 | 100.2 | 100.0 | 94.0 | 79.7 |
| Residential telephone service [2] | 100.0 | 101.2 | 100.8 | 100.0 | 84.5 | 87.1 |
| Pipe lines | 100.0 | 100.0 | 87.9 | 100.0 | (4) | (4) |
| 25-kw.-hr. electricity [3] | 100.0 | 96.6 | 86.7 | 100.0 | 120.7 | 156.5 |
| Postal service | 100.0 | 115.7 | 123.0 | 100.0 | 77.6 | 82.4 |
| Air passenger service [5] | 100.0 | 50.8 | 47.5 | 100.0 | 354.8 | 1,217.2 |

[1] Derived from subsequent tables. Consumption indexes are not strictly comparable to price indexes, but provide a rough basis of comparison. It is not implied, however, that changes in consumption are due solely, or even largely, to changes in price.

[2] Price data for Wisconsin only; consumption data for the entire national Bell Telephone System, and connecting lines.

[3] Price index from Table VIII, is for 25 kilowatt-hours.

[4] Not available.

[5] Passenger-miles in 1929 estimated by assuming average miles per passenger same as in 1930.

TABLE II.—*Index numbers of adjusted and unadjusted revenue per ton-mile, and of revenue ton-miles, all steam railroads, 1900–36* [1]

[1926=100]

| Year ended | Revenue per ton-mile | Adjusted revenue per ton-mile [2] | Revenue ton-miles |
|---|---|---|---|
| *June 30* | | | |
| 1900 | 66.5 | 56.6 | 31.6 |
| 1901 | 68.4 | 59.3 | 32.9 |
| 1902 | 69.1 | 57.8 | 35.2 |
| 1903 | 69.6 | 58.2 | 38.7 |
| 1904 | 71.2 | 59.8 | 39.0 |
| 1905 | 69.9 | 58.8 | 41.7 |
| 1906 | 68.3 | 58.0 | 48.2 |
| 1907 | 69.3 | 59.5 | 52.9 |
| 1908 | 68.8 | 61.0 | 48.8 |
| 1909 | 69.6 | 61.3 | 48.9 |
| 1910 | 68.7 | 61.2 | 57.0 |
| 1911 | 69.1 | 60.7 | 56.7 |
| 1912 | 67.9 | 59.9 | 59.0 |
| 1913 | 66.5 | 58.9 | 67.1 |
| 1914 | 67.2 | 59.8 | 64.6 |
| 1915 | 67.1 | 59.1 | 61.9 |
| 1916 | 65.6 | 59.1 | 76.8 |
| *Dec. 31* | | | |
| 1916 | 65.6 | 59.8 | 81.8 |
| 1917 | 66.1 | 62.2 | 89.0 |
| 1918 | 78.7 | 74.7 | 91.4 |
| 1919 | 90.1 | 84.8 | 82.1 |
| 1920 | 97.5 | 93.4 | 92.5 |
| 1921 | 118.1 | 111.8 | 69.2 |
| 1922 | 108.9 | 103.2 | 76.5 |
| 1923 | 103.3 | 100.2 | 93.0 |
| 1924 | 103.3 | 100.2 | 87.6 |
| 1925 | 101.6 | 99.6 | 93.3 |
| 1926 | 100.0 | 100.0 | 100.0 |
| 1927 | 99.9 | 100.0 | 96.6 |
| 1928 | 99.8 | 100.1 | 97.5 |
| 1929 | 99.3 | 100.0 | 100.6 |
| 1930 | 98.0 | 98.8 | 86.2 |
| 1931 | 96.9 | 99.9 | 69.5 |
| 1932 | 96.4 | 101.9 | 52.6 |
| 1933 | 92.1 | 98.0 | 56.0 |
| 1934 | 90.2 | 95.8 | 60.4 |
| 1935 | 91.1 | 97.7 | 63.4 |
| 1936 | 89.8 | 96.2 | 76.3 |

[1] Railroad data were compiled from Interstate Commerce Commission, *Statistics of Railways in the United States*, Washington, annual.

[2] Average revenue per ton-mile, adjusted for changes in average length of haul and for changes in the commodity composition of traffic, as described in accompanying text.

TABLE III.—*Average revenue per passenger-mile and number of passenger-miles, class I railroads, 1911–36* [1]

[1926=100]

| Year ended | Revenue per passenger-mile (cents) | | | | | | Passenger-miles (000's) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total | Index | Noncommutation | Index | Commutation | Index | Total | Index | Noncommutation | Index | Commutation | Index |
| *June 30* | | | | | | | | | | | | |
| 1911 | 1.96 | 66.7 | | | | | 32,371,445 | 91.2 | | | | |
| 1912 | 1.98 | 67.3 | | | | | 32,316,263 | 91.1 | | | | |
| 1913 | 2.00 | 68.0 | | | | | 33,875,086 | 95.5 | | | | |
| 1914 | 1.98 | 67.3 | | | | | 34,596,985 | 97.4 | | | | |
| 1915 | 1.98 | 67.3 | | | | | 31,789,928 | 89.6 | | | | |
| 1916 | 2.00 | 68.0 | | | | | 33,645,908 | 94.8 | | | | |
| *Dec. 31* | | | | | | | | | | | | |
| 1916 | 2.04 | 69.4 | | | | | 34,585,952 | 97.5 | | | | |
| 1917 | 2.09 | 71.1 | | | | | 39,476,859 | 111.3 | | | | |
| 1918 | 2.41 | 82.0 | | | | | 42,676,579 | 120.3 | | | | |
| 1919 | 2.54 | 86.4 | | | | | 46,358,304 | 130.7 | | | | |
| 1920 | 2.74 | 93.2 | | | | | 46,848,668 | 132.1 | | | | |
| 1921 | 3.09 | 105.1 | | | | | 37,312,586 | 105.2 | | | | |
| 1922 | 3.03 | 103.1 | 3.13 | 102.4 | 1.10 | 97.3 | 35,469,962 | 100.0 | 29,381,998 | 101.7 | 6,131,784 | 92.8 |
| 1923 | 3.02 | 102.7 | 3.41 | 101.8 | 1.09 | 96.5 | 37,956,595 | 107.0 | 31,607,400 | 109.4 | 6,400,779 | 96.9 |
| 1924 | 2.98 | 101.4 | 3.38 | 100.9 | 1.10 | 97.3 | 36,090,886 | 101.7 | 29,716,926 | 102.8 | 6,406,831 | 97.0 |
| 1925 | 2.91 | 100.0 | 3.34 | 99.7 | 1.11 | 98.2 | 35,950,223 | 101.3 | 29,367,767 | 101.6 | 6,592,186 | 99.8 |
| 1926 | 2.94 | 100.0 | 3.35 | 100.0 | 1.13 | 100.0 | 35,477,525 | 100.0 | 28,894,554 | 100.0 | 6,604,623 | 100.0 |
| 1927 | 2.90 | 98.6 | 3.34 | 99.7 | 1.11 | 98.2 | 33,649,706 | 94.8 | 27,066,452 | 93.5 | 6,649,871 | 100.7 |
| 1928 | 2.85 | 96.9 | 3.31 | 98.8 | 1.11 | 98.2 | 31,601,342 | 89.1 | 24,990,575 | 86.5 | 6,625,723 | 100.3 |
| 1929 | 2.81 | 95.5 | 3.29 | 98.2 | 1.11 | 98.2 | 31,074,135 | 87.6 | 24,180,151 | 83.7 | 6,898,473 | 104.4 |
| 1930 | 2.72 | 92.5 | 3.25 | 97.0 | 1.09 | 96.5 | 26,814,825 | 75.6 | 20,154,997 | 69.8 | 6,659,110 | 101.0 |
| 1931 | 2.51 | 85.4 | 3.06 | 91.3 | 1.06 | 93.8 | 21,894,421 | 61.7 | 15,876,665 | 54.9 | 6,017,959 | 91.1 |
| 1932 | 2.22 | 75.5 | 2.70 | 80.6 | 1.07 | 94.7 | 16,971,044 | 47.8 | 11,988,137 | 41.5 | 4,985,708 | 75.5 |
| 1933 | 2.01 | 68.4 | 2.35 | 70.1 | 1.08 | 95.6 | 16,340,510 | 46.1 | 12,035,444 | 41.7 | 4,308,206 | 65.2 |
| 1934 | 1.92 | 65.3 | 2.17 | 64.8 | 1.09 | 96.5 | 18,033,309 | 50.8 | 13,873,079 | 48.0 | 4,163,032 | 63.0 |
| 1935 | 1.93 | 65.6 | 2.18 | 65.1 | 1.09 | 96.5 | 18,475,572 | 52.1 | 14,357,441 | 49.7 | 4,118,131 | 62.4 |
| 1936 | 1.84 | 62.6 | 2.02 | 60.3 | 1.06 | 93.8 | 22,416,061 | 63.2 | 18,228,350 | 63.1 | 4,187,710 | 63.4 |

[1] Computed from Interstate Commerce Commission, *Statistics of Railways in the United States*, Washington, annual. The 1936 data are from the Commission's monthly statement, *Revenue Traffic Statistics of Class I Steam Railways*, December 1936.

TABLE IV.—*Street-railway fares and passenger volume, 1913–36*

[Indexes 1926=100]

| Year | Fares | | | Number of passengers [3] | |
|---|---|---|---|---|---|
| | American Transit Association | | Richey index of fares [2] | In thousands | Index |
| | Average fare (cents) [1] | Index of fares | | | |
| 1913 | | | 65.8 | | |
| 1914 | | | 65.8 | | |
| 1915 | | | 65.9 | | |
| 1916 | | | 65.9 | | |
| 1917 | 5.048 | 66.8 | 66.2 | 14,506,915 | 95.3 |
| 1918 | 5.633 | 74.5 | 69.9 | 14,243,415 | 93.6 |
| 1919 | 6.208 | 82.1 | 79.5 | 14,915,994 | 98.0 |
| 1920 | 7.027 | 93.0 | 90.3 | 15,540,715 | 102.1 |
| 1921 | 7.288 | 96.4 | 98.0 | 14,574,439 | 95.7 |
| 1922 | 7.311 | 96.7 | 96.1 | 15,331,400 | 100.7 |
| 1923 | 7.136 | 94.4 | 94.1 | 15,650,000 | 102.8 |
| 1924 | 7.343 | 97.1 | 95.6 | 15,312,000 | 100.6 |
| 1925 | 7.445 | 98.5 | 98.9 | 15,167,000 | 99.6 |
| 1926 | 7.559 | 100.0 | 100.0 | 15,225,000 | 100.0 |
| 1927 | 7.649 | 101.2 | 101.0 | 14,901,435 | 97.9 |
| 1928 | 7.847 | 103.8 | 102.4 | 14,521,000 | 95.4 |
| 1929 | 8.012 | 106.0 | 103.4 | 14,263,000 | 94.3 |
| 1930 | 8.402 | 111.2 | 105.3 | 13,088,000 | 86.0 |
| 1931 | 8.196 | 108.4 | 106.1 | 11,611,000 | 76.3 |
| 1932 | 8.212 | 108.6 | 106.8 | 9,888,535 | 64.9 |
| 1933 | 8.153 | 107.9 | 107.0 | 9,285,500 | 61.0 |
| 1934 | 8.139 | 107.7 | 106.4 | 9,778,300 | 64.2 |
| 1935 | 8.110 | 107.3 | 106.4 | 9,729,000 | 63.9 |
| 1936 | | | 106.4 | 10,038,000 | 65.9 |

[1] This is an unweighted average of monthly cash fares for street railway or bus service in cities of 25,000 or more population. There is a variation in the number of cities; in 1932, 320 cities were included, while in 1936 there were 268. The data are compiled by the American Transit Association, formerly the American Street Railway Association, and are published in the annual supplement of the *Survey of Current Business*, U. S. Department of Commerce, Washington.

[2] An average, including all cities of 50,000 or more population, except New York. The average is weighted according to population, the 1930 census having been used back to 1926. Prepared by Mr. Richey, an engineer, this series appears in Moody's *Public Utilities*. It is here changed from Richey's base, 1913, to a 1926 base.

[3] These data are taken from Moody's *Public Utilities*. The statistics for 1917, 1922, 1927 and 1932 are from the *Census of Street Railways*; the statistics for the remaining years were obtained from the American Transit Association.

TABLE V.—*Index numbers of residential price of typical amounts of manufactured gas in 25 cities 1913–36;* [1] *total and per customer residential consumption of manufactured and mixed gas in identical cities, 1929–36.* [2]

[1926=100]

| Year | Price indexes | | | Consumption | |
|---|---|---|---|---|---|
| | 3,000 cubic feet | 10.6 therms | 30.6 therms | Total residential consumption (millions of cubic feet) | Per capita residential consumption (millions of cubic feet) |
| 1913 | 77.6 | (3) | (3) | | |
| 1914 | 77.5 | (3) | (3) | | |
| 1915 | 76.0 | (3) | (3) | | |
| 1916 | 75.1 | (3) | (3) | | |
| 1917 | 74.3 | (3) | (3) | | |
| 1918 | 77.6 | (3) | (3) | | |
| 1919 | 84.9 | (3) | (3) | | |
| 1920 | 89.0 | (3) | (3) | | |
| 1921 | 107.0 | (3) | (3) | | |
| 1922 | 103.7 | (3) | (3) | | |
| 1923 | 102.1 | 100.2 | 100.2 | | |
| 1924 | 101.2 | 100.6 | 100.3 | | |
| 1925 | 100.5 | 100.5 | 100.2 | | |
| 1926 | 100.0 | 100.0 | 100.0 | | |
| 1927 | 99.6 | 100.0 | 99.8 | | |
| 1928 | 99.2 | 100.1 | 99.4 | | |
| 1929 | 99.2 | 100.0 | 99.2 | 255,841 | 28.0 |
| 1930 | 96.2 | 100.7 | 98.2 | 257,583 | 27.7 |
| 1931 | 93.9 | 100.0 | 97.5 | 253,068 | 27.3 |
| 1932 | 93.9 | 99.8 | 95.1 | 240,495 | 26.7 |
| 1933 | 93.1 | 99.0 | 93.0 | 223,110 | 25.7 |
| 1934 | 93.1 | 99.2 | 93.0 | 216,507 | 24.6 |
| 1935 | (3) | 100.8 | 94.4 | 207,451 | 23.2 |
| 1936 | (3) | 100.2 | 91.9 | 204,007 | 22.6 |

[1] Price indexes based on thermal quantities from U. S. Bureau of Labor Statistics, bulletin No. 628, *Changes in Retail Prices of Gas, 1923–36*. Washington, 1937.

[2] Compiled from data in the *Annual Statistics of the Manufactured Gas Industry*, American Gas Association, New York, 1937.

(3) Not available.

TABLE VI.—*Amounts and index numbers of Wisconsin residentia telephone rates and of national usage, 1913–36* [1]

[1926=100]

| Year | Wisconsin telephone rates | | Telephones per 1,000 United States population | |
|---|---|---|---|---|
| | Rates | Index | Number | Index |
| 1913 | $1.83 | 75.3 | 84.3 | 55.9 |
| 1914 | 1.83 | 75.3 | 88.3 | 58.6 |
| 1915 | 1.83 | 75.3 | 92.3 | 61.2 |
| 1916 | 1.76 | 72.4 | 97.7 | 64.8 |
| 1917 | 1.77 | 72.8 | 102.5 | 68.0 |
| 1918 | 1.77 | 72.8 | 106.1 | 70.4 |
| 1919 | 1.80 | 74.1 | 112.3 | 74.5 |
| 1920 | 2.03 | 83.5 | 118.3 | 78.4 |
| 1921 | 2.10 | 86.4 | 123.7 | 82.0 |
| 1922 | 2.37 | 97.5 | 127.9 | 84.8 |
| 1923 | 2.37 | 97.5 | 134.5 | 89.2 |
| 1924 | 2.38 | 97.9 | 140.5 | 93.2 |
| 1925 | 2.39 | 98.4 | 145.6 | 96.6 |
| 1926 | 2.43 | 100.0 | 150.8 | 100.0 |
| 1927 | 2.45 | 100.8 | 155.4 | 103.1 |
| 1928 | 2.46 | 101.2 | 160.2 | 106.2 |
| 1929 | 2.46 | 101.2 | 164.2 | 108.9 |
| 1930 | 2.47 | 101.6 | 163.3 | 108.3 |
| 1931 | 2.47 | 101.6 | 157.9 | 104.7 |
| 1932 | 2.49 | 102.3 | 138.8 | 92.0 |
| 1933 | 2.49 | 102.3 | 132.3 | 87.7 |
| 1934 | 2.48 | 102.2 | 132.7 | 88.0 |
| 1935 | 2.48 | 102.1 | 136.1 | 90.3 |
| 1936 | 2.48 | 102.0 | 143.0 | 94.8 |

[1] Rates were compiled from data supplied by the Wisconsin Public Service Commission, representing a weighted average of 51 cities and three types of service. Telephone usage data were computed from number of telephones owned by and connecting with the Bell system and annual population estimates, both of which are published in U. S. Department of Commerce *Statistical Abstract* annually.

TABLE VII.—*Pipe-line rates on crude petroleum from Oklahoma and Kansas points to major refining centers, 1915–36* [1]

[1926=100]

| Year | Index of unweighted average | Cleveland | | St. Louis [2] | | Whiting [3] | |
|---|---|---|---|---|---|---|---|
| | | Cents per barrel | Index | Cents per barrel | Index | Cents per barrel | Index |
| 1915 | 91.8 | 58 | 92.8 | 34 | 91.3 | 42 | 91.3 |
| 1916 | 91.8 | 58 | 92.8 | 34 | 91.3 | 42 | 91.3 |
| 1917 | 91.8 | 58 | 92.8 | 34 | 91.3 | 42 | 91.3 |
| 1918 | 91.8 | 58 | 92.8 | 34 | 91.3 | 42 | 91.3 |
| 1919 | 91.8 | 58 | 92.8 | 34 | 91.3 | 42 | 91.3 |
| 1920 | 123.7 | 72.50 | 116.0 | 52.50 | 140.9 | 52.50 | 114.1 |
| 1921 | 123.7 | 72.50 | 116.0 | 52.50 | 140.9 | 52.50 | 114.1 |
| 1922 | 100.5 | 63.50 | 101.6 | 37.25 | 100.0 | 46 | 100.0 |
| 1923 | 100.5 | 63.50 | 101.6 | 37.25 | 101.0 | 46 | 100.0 |
| 1924 | 100.5 | 63.50 | 101.6 | 37.25 | 100.0 | 46 | 100.0 |
| 1925 | 100.5 | 63.50 | 101.6 | 37.25 | 100.0 | 46 | 100.0 |
| 1926 | 100.0 | 62.50 | 100.0 | 37.25 | 100.0 | 46 | 100.0 |
| 1927 | 100.0 | 62.50 | 100.0 | 37.25 | 100.0 | 46 | 100.0 |
| 1928 | 100.0 | 62.50 | 100.0 | 37.25 | 100.0 | 46 | 100.0 |
| 1929 | 100.0 | 62.50 | 100.0 | 37.25 | 100.0 | 46 | 100.0 |
| 1930 | 100.0 | 62.50 | 100.0 | 37.25 | 100.0 | 46 | 100.0 |
| 1931 | 100.0 | 62.50 | 100.0 | 37.25 | 100.0 | 46 | 100.0 |
| 1932 | 100.0 | 62.50 | 100.0 | 37.25 | 100.0 | 46 | 100.0 |
| 1933 | 100.0 | 62.50 | 100.0 | 37.25 | 100.0 | 46 | 100.0 |
| 1934 | 87.9 | 55 | 88.0 | 32.25 | 86.6 | 41 | 89.1 |
| 1935 | 87.9 | 55 | 88.0 | 32.25 | 86.6 | 41 | 89.1 |
| 1936 | 87.9 | 55 | 88.0 | 32.25 | 86.6 | 41 | 89.1 |

[1] Compiled from tariffs filed with the Interstate Commerce Commission by the Sinclair Prairie Pipe Line Company, and predecessor and related companies. The rates are for trunk-line movements only; gathering charges are excluded. For years 1923–36, inclusive, origin points in Texas are included under blanket tariffs for Oklahoma, Kansas, and Texas origin points.

[2] To Wood River, adjacent to St. Louis.

[3] In the Chicago refining area. In 1932–36 the tariff used is to East Chicago, adjacent to Whiting.

TABLE VIII.—*Average price per kilowatt-hour for residential consumption of 25, 100, and 250 kilowatt-hours of electricity in cities of 50,000 or more population; total residential consumption and kilowatt-hours per consumer in the United States, 1924–36* [1]

[1926=100]

| Year [2] | Average price per kilowatt-hour (cents) [3] | | | | | | Consumption | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 25 kw.-hr. | Index | 100 kw.-hr. | Index | 250 kw.-hr. | Index | Residential consumption in kw.-hr | | Kilowatt-hour per customer per year | |
| | | | | | | | *Amount* | *Index* | *Amt.* | *Index* |
| 1923 | | | | | | | | | 264 | 61.7 |
| 1924 | | | | | | | | | 268 | 62.6 |
| 1925 | | | | | | | | | 260 | 60.7 |
| 1926 | | | | | | | | | 265 | 61.9 |
| 1927 | | | | | | | | | 268 | 62.6 |
| 1928 | | | | | | | | | 272 | 63.6 |
| 1929 | | | | | | | | | 293 | 68.5 |
| 1930 | | | | | | | 2,950,000 | 43.9 | 339 | 79.2 |
| 1931 | | | | | | | 3,275,000 | 48.7 | 347 | 81.1 |
| 1932 | | | | | | | 3,670,000 | 54.6 | 359 | 83.9 |
| 1933 | | | | | | | 4,120,000 | 61.7 | 368 | 86.0 |
| 1934 | 7.7 | 103.2 | 6.2 | 105.6 | 5.3 | 106.3 | 5,270,000 | 78.3 | 378 | 88.3 |
| 1935 | 7.5 | 101.0 | 6.0 | 102.5 | 5.2 | 103.0 | 5,930,000 | 88.2 | 398 | 93.0 |
| 1936 | 7.4 | 100.0 | 5.9 | 100.0 | 5.0 | 100.0 | 6,727,605 | 100.0 | 428 | 100.0 |
| 1927 | 7.2 | 97.3 | 5.6 | 95.4 | 4.8 | 95.0 | 7,538,338 | 112.1 | 444 | 103.7 |
| 1928 | 7.0 | 94.6 | 5.3 | 91.2 | 4.5 | 89.5 | 8,419,628 | 125.2 | 466 | 108.9 |
| 1929 | 6.9 | 93.0 | 5.1 | 87.6 | 4.3 | 85.0 | 9,525,725 | 141.6 | 477 | 111.1 |
| 1930 | 6.8 | 91.3 | 5.0 | 85.1 | 4.2 | 82.6 | 10,702,175 | 159.1 | 548 | 128.0 |
| 1931 | 6.8 | 90.8 | 4.7 | 80.7 | 3.8 | 76.2 | 11,372,580 | 169.1 | 580 | 135.5 |
| 1932 | 6.7 | 89.8 | 4.7 | 79.4 | 3.8 | 74.9 | 11,803,892 | 170.9 | 597 | 139.5 |
| 1933 | 6.5 | 87.6 | 4.6 | 78.2 | 3.7 | 73.6 | 11,358,806 | 168.9 | 593 | 138.6 |
| 1934 | 6.3 | 84.9 | 4.5 | 76.3 | 3.6 | 71.4 | 12,232,748 | 181.9 | 624 | 145.8 |
| 1935 | 6.2 | 83.0 | 4.3 | 73.9 | 3.3 | 66.9 | 13,496,232 | 200.6 | 689 | 156.3 |
| 1936 | 6.0 | 80.6 | 4.2 | 71.4 | 3.1 | 61.6 | 14,008,000 | 221.6 | 719 | 168.0 |

[1] Price data compiled from Federal Power Commission, *Trends in Residential Rates from 1924 to 1936*, Washington, 1937. Total consumption data from Edison Electric Institute, *Statistical Bulletin* No. 4, New York, 1937, for years 1926–36; for earlier years data are those appearing in Moody's *Public Utilities*, the *Electrical World* being credited as the source. Average consumption data were compiled from the Edison Electric Institute, cited above.

[2] The price data for the years 1924–34 are as of October 1. The 1935 price is an average of the prices for Jan. 1, 1935 and Jan. 1, 1936, the 1936 price is that for July 1, 1936.

[3] The data are averages weighted according to population, for 150 utilities operating in 132 cities, which include 88 percent of the population in the cities of 50,000 or more persons. The cities included contain 46 percent of the population living in communities of 250 or more persons. Page 21 of the report cited above: "When two or more utilities serve in the same city, the rates of each of the utilities for which this city is the 'major' city served by the utility are shown, and as a result the bills of 150 utilities are reported for the 132 cities."

TABLE IX.—*Amount and index numbers of average price per kilowatt-hour for residential consumption of 25, 100, and 250 kilowatt-hours of electricity, 51 cities in the United States: 1906–36* [1]

[1926=100]

| Year | 25 kw.-hr. | | 100 kw.-hr. | | 250 kw.-hr. | |
|---|---|---|---|---|---|---|
| | Amount | Index | Amount | Index | Amount | Index |
| 1906 | 11.1 | 154.2 | 10.3 | 183.9 | 9.6 | 194.1 |
| 1907 | 10.6 | 147.2 | 9.9 | 176.8 | 9.3 | 186.3 |
| 1908 | 10.5 | 145.8 | 9.7 | 173.2 | 9.1 | 182.4 |
| 1909 | 10.1 | 140.3 | 9.4 | 167.9 | 9.0 | 176.5 |
| 1910 | 10.1 | 140.3 | 9.2 | 164.3 | 8.8 | 172.5 |
| 1911 | 10.0 | 138.9 | 8.7 | 155.4 | 8.3 | 166.7 |
| 1912 | 9.7 | 134.9 | 8.5 | 151.8 | 8.3 | 162.7 |
| 1913 | 9.1 | 126.4 | 8.0 | 142.9 | 7.8 | 152.9 |
| 1914 | 8.9 | 123.6 | 7.7 | 137.5 | 7.4 | 145.1 |
| 1915 | 8.8 | 122.2 | 7.6 | 135.7 | 7.3 | 143.1 |
| 1916 | 8.3 | 115.3 | 6.9 | 123.2 | 6.5 | 127.5 |
| 1917 | 7.6 | 105.6 | 6.2 | 110.7 | 5.9 | 115.7 |
| 1918 | 7.5 | 104.2 | 6.0 | 107.1 | 5.7 | 111.8 |
| 1919 | 7.6 | 105.6 | 6.1 | 108.9 | 5.6 | 109.8 |
| 1920 | 7.7 | 106.9 | 6.0 | 107.1 | 5.6 | 109.8 |
| 1921 | 8.0 | 111.1 | 6.3 | 112.5 | 5.8 | 113.7 |
| 1922 | 7.8 | 108.3 | 6.1 | 108.9 | 5.7 | 111.8 |
| 1923 | 7.6 | 105.6 | 6.1 | 108.9 | 5.7 | 111.8 |
| 1924 | 7.5 | 104.2 | 5.8 | 103.6 | 5.4 | 105.9 |
| 1925 | 7.4 | 102.8 | 5.7 | 101.8 | 5.2 | 102.0 |
| 1926 | 7.2 | 100.0 | 5.6 | 100.0 | 5.1 | 100.0 |
| 1927 | 7.2 | 100.0 | 5.5 | 98.2 | 5.0 | 98.0 |
| 1928 | 7.0 | 97.2 | 5.3 | 94.6 | 4.8 | 94.1 |
| 1929 | 6.8 | 94.4 | 5.2 | 92.9 | 4.5 | 88.2 |
| 1930 | 6.7 | 93.1 | 5.0 | 89.3 | 4.3 | 84.3 |
| 1931 | 6.6 | 91.7 | 4.9 | 87.5 | 4.2 | 82.4 |
| 1932 | 6.6 | 91.7 | 4.6 | 82.1 | 3.8 | 74.5 |
| 1933 | 6.5 | 90.3 | 4.5 | 80.4 | 3.8 | 74.5 |
| 1934 | 6.3 | 87.5 | 4.5 | 78.6 | 3.7 | 72.5 |
| 1935 | 6.2 | 86.1 | 4.4 | 78.6 | 3.6 | 70.6 |
| 1936 | 6.0 | 83.3 | 4.2 | 75.0 | 3.1 | 60.8 |

[1] The price data were presented by Vice President W. G. Vincent of the Pacific Gas and Electric Company in an article entitled "Rate Reductions," *Edison Electric Institute Bulletin*, June 1936. The 51 cities are those that were employed by the Bureau of Labor Statistics in its computation (discontinued November 1934) of the cost of most popular consumption amounts of electricity, appearing in its retail price bulletins; the method followed duplicates that of the Federal Power Commission in its computation of typical bills.

TABLE X.—*Index numbers of United States postal rates and amounts and index numbers of pounds of matter carried; 1919–35.* [1]

[1926=100]

| Year [2] | Index of Postal rates | Pounds of postal matter | |
|---|---|---|---|
| | | Amount (000,000's omitted) | Index 1927=100 |
| 1919 | 94.9 | | |
| 1920 | 94.6 | | |
| 1921 | 95.1 | | |
| 1922 | 95.4 | | |
| 1923 | 95.4 | | |
| 1924 | 95.8 | | |
| 1925 | 97.6 | | |
| 1926 | 100.0 | | |
| 1927 | 100.9 | 6,356 | 100.0 |
| 1928 | 100.1 | 6,416 | 100.9 |
| 1929 | 99.3 | 6,490 | 102.1 |
| 1930 | 99.3 | 6,704 | 105.5 |
| 1931 | 99.3 | 6,043 | 95.1 |
| 1932 | 114.9 | 5,040 | 79.3 |
| 1933 | 126.5 | 4,345 | 68.4 |
| 1934 | 122.3 | 4,233 | 66.6 |
| 1935 | 122.1 | 4,578 | 72.0 |
| 1936 | 122.1 | 5,350 | 84.1 |

[1] Postal rates computed from U. S. Post Office Department *Postage Rates, 1789–1930*, *Abstracts of Laws Passed* and *Ibid*, annual supplements, 1931–36; a weighted average was used. Pounds of matter carried compiled from U. S. Post Office Department *Reports of the Postmaster General*, annually. See *Patterns of Resource Use*, National Resources Committee, 1938, p. 95.

[2] Adjusted from the fiscal to calendar year by a 2-year average.

TABLE XI.—*Amount and index numbers of revenue per passenger-mile, of number of passengers, and of passenger miles, scheduled air transport* [1]

[1930=100]

| Year | Average revenue per passenger-mile | | Number of passengers | | Passenger miles | |
|---|---|---|---|---|---|---|
| | Amount (cents) | Index | Amount | Index | Amount | Index |
| 1926 | 12.0 | 144.5 | 5,782 | 1.5 | (a) | (a) |
| 1927 | 10.6 | 127.6 | 8,661 | 2.3 | (a) | (a) |
| 1928 | 11.0 | 132.5 | 47,840 | 12.8 | (a) | (a) |
| 1929 | 12.0 | 144.5 | 159,751 | 42.6 | (a) | (a) |
| 1930 | 8.3 | 100.0 | 374,935 | 100.0 | 84,044,572 | 100.0 |
| 1931 | 6.7 | 80.6 | 469,984 | 125.3 | 106,442,375 | 126.7 |
| 1932 | 6.1 | 73.4 | 474,279 | 126.5 | 127,038,708 | 151.2 |
| 1933 | 6.1 | 73.4 | 493,141 | 131.5 | 173,492,119 | 206.5 |
| 1934 | 5.9 | 71.1 | 461,743 | 123.2 | 187,858,029 | 223.6 |
| 1935 | 5.7 | 68.6 | 746,946 | 199.2 | 313,905,508 | 373.6 |
| 1936 | 5.7 | 68.6 | 1,020,931 | 272.3 | 435,740,253 | 518.7 |

[1] Compiled from the *Air Commerce Bulletin*, U. S. Department of Commerce, Washington, June 15, 1937, pp. 262–264.

[2] Not available.

# APPENDIX 5.[1]—THE RELATION OF TARIFFS TO THE PRICE STRUCTURE

In the following tables, the relation between tariffs and wholesale prices is set forth in the effort to throw light on the effects of tariffs upon price behavior. In presenting the rates contained in the tariff schedules, note should be made of factors other than the height of the protection afforded by the rates which may affect the importation of goods.

It is convenient to group the more disguised protective measures which act along with and in addition to the custom duties themselves, under the title of "administrative" protection.[2] Here we find that the administration of customs, formalities, rules regarding marks of origin, veterinary and sanitary regulations, food and drug regulations, laws concerning the assessment of ad valorem duties, and the process of classification of imports all contribute to the national policy of controlling the flow of goods in international trade. Instances can be cited where the charges for the formalities at the custom border have more than doubled the ad valorem equivalent of the statutory tariff rate.[3] Also, many times in many different countries the shibboleth of public health has been used to justify actual prohibition or discrimination in regard to imports of food and similar products.[4] Another, but quite different, form of administrative protection arises out of the technical problem of classifying goods for entry. The gamut of "commercial designation," "legislative intent," "chief use," "in chief value of," "similitude clause," etc., must be run and during such procedure imports may be held up indefinitely.[5] In fact, the uncertainty involved in the awaited decision as well as the cost of bond, etc. may inhibit importation more than if an even higher but certain rate had been applied in the first case.

It seems pertinent to point out that in some cases a very low tariff rate on one commodity will furnish more protection than a high rate (ad valorem equivalent) on another commodity. In a situation where there is a slight or no difference between the imported cost and the cost of the domestic article a very low ad valorem rate might give much more protection than a considerably higher rate levied on another commodity which had a large differential of disadvantage to the foreign-made goods. A usual type of this sort of thing occurs where the cost of transportation of one commodity is much greater per unit of dollar value than the cost of transportation of another article.[6]

Another factor which complicates a study of the relationship between the tariff and prices is one which arises out of the existence of both ad valorem and specific customs rates in the United States tariff schedules. The specific duty, which is a fixed sum of money to be paid on some stated unit of quantity of a commodity, presents more difficulties in this analysis than the ad valorem rate, which is a fixed percentage of the value of the imported article. The specific rate acts as a regressive tax in the case where there are several qualities of a commodity imported, i. e., the cheaper qualities tend to get a greater amount (percentage) of protection per unit of value than the more expensive items. In some cases this is offset in part by levying a larger specific duty on the dearer goods and to the extent that such a procedure is followed the specific duty approaches the ad valorem duty in character. It is also of great significance that the weight of the specific duty varies inversely with the price level and particularly that it varies inversely with the price changes of the commodity upon which it is levied. It is true, of course, that the ad valorem type of duty presents difficult problems of appraisement and therefore considerable room for the operation of administrative protection activities. However, its very percentage character prevents it from having such a fluctuating protective role as the specific duty.

In spite of these difficulties, a comparison of wholesale prices [7] in the United States with the tariff protection of the commodities to which the prices refer should throw some light on the relation between price behavior and protection. In order that this material might be in such form as to reveal any possible connection between tariff rates and price flexibility, the wholesale prices have been arranged in groups according to their relative frequency of change and their relative magnitude of change. For this purpose, the procedure described in Appendix 2 and the groupings shown in tables II and

[1] Appendix 5 was prepared by Edward C. Welsh.

[2] Cf., E. M. Winslow, *Administrative Protectionism*, *Explorations in Economics*, McGraw-Hill Book Co., Inc., N. Y., 1937; also Josef Gruntzel, *Economic Protectionism*, 1916; also, B. A. Levett, *Through the Customs Maze*, N. Y., 1923.

[3] For instance, on a port cargo of less than 200 tons destined for Portuguese West Indies, the following consular charges were levied (in English pounds): Rotterdam 4, Antwerp 2, Dunkerque 1, Middlesborough 2, Hull 2, London 2. 1.10, Port Said, 1, Suez, 4. See *World Trade*, I. C. C., April 1932.

[4] Cf., *World Trade Barriers in Relation to America Agriculture*, Senate Document No. 70, 1933; Sir Frederick Leith-Ross, "Report of the Economic Committee of the League of Nations on Agricultural Protectionism; *Board of Trade Journal* (Gr. Br.) London, May 1937; etc.

[5] Cf., "*American Importer*," November 1934; September 1934; *World Trade*, May 1932; *U. S. Customs Encyclopedia*, 1934, etc.

[6] For instance, a case of South African apples, weighing 46 pounds, was sent from London to the continent of Europe, a distance of 650 miles. The invoice value was $1.64 and total cost was $6.22. Transport costs were 75.76 percent of total costs. Imports of certain commodities, such as cement and certain fresh vegetables, are restricted to certain areas of a country, usually along the coast or border, largely because of the low unit values of such goods and of the high proportion which transportation costs are of total delivered costs. See Doc. No. 180, 72d Cong.

[7] Bureau of Labor Statistics wholesale prices.

III of Appendix 2 were used. In a few instances, items in the Bureau of Labor Statistics wholesale price series which were combined to form a single item in the tables in Appendix 2 carry different tariff rates. In these cases, the separate items are presented in the following tables in place of the composite items which appear in appendix 2 and this fact is noted on the tables.

In table I the items are grouped into 10 groups on the basis of frequency of price change. This grouping corresponds to, and follows the order of Appendix 2, table II.

In table II, the items are grouped into 10 groups on the basis of price sensitivity. This grouping corresponds to, and follows the order of Appendix 2, table III. By reference to Appendix 2, table II, it is possible to see in which sensitivity groups the items in each frequency group are to be found.

The procedure for deriving the tariff rate on items corresponding to the items in the Bureau of Labor Statistics wholesale price series was as follows:

(1) The commodities in the Bureau of Labor Statistics series were checked in order that further information about the particular nature of each item might be obtained. Description, adequate for accurate tariff classification, was not available in every instance.

(2) With this information to be used as a guide, the Tariff Act of 1930 was used for ascertaining the probable paragraph and rate of the tariff applicable to each commodity.

(3) Next, the United States Department of Commerce publication, *Statistical Classification of Imports into the United States* was used as a more accurate check on the tariff rates. In some of the more complicated instances, recent Treasury Decisions of the Customs Court were obtained to clarify problems of classification. The coding system used in the above mentioned Commerce publication was followed and recorded so that each item could be located more readily in further examination.

(4) An arithmetic mean of the annual wholesale prices of each of the 734 items was figured for the years 1930 to 1936 inclusive (the years during which the 1930 tariff act has been in force). The purpose of this average was to aid in more accurate classification of those commodities on which the duties vary according to the value of the item, e. g., "valued not over $2 a dozen" and "valued over $2 a dozen" (61548 and 61549). It appeared that an average of these prices over a period of years was a better basis for such classification than the prices for any one year.

(5) Then, by aid of the code numbers obtained in the Department of Commerce publication, further classification checking was done with the more detailed Tariff Commission publication, *Comparative Statistics of Imports Into the United States for Consumption* (11 volumes 1931–35) and also with the annual publication, *Foreign Commerce and Navigation of the United States*.

(6) Each item was then checked to ascertain if and to what extent it was affected by the reciprocal trade agreement changes. Each such change was noted.

(7) Using the afore-mentioned Tariff Commission publication for 1931–35 and the latest publication of the same title for the year 1936, the specific duties were translated into equivalent ad volorem rates for each commodity dutiable at specific rates. In cases of combination rates (both specific and ad valorem) the equivalent ad valorem rate shows such combination. The procedure was as follows: The total amount of duty collected on a particular commodity in each of the years studied was compared with the total value of this commodity imported during this particular year. This gave the ad valorem equivalent for a specific duty levied. In cases where there was a combination (specific and ad valorem) duty levied, the number of items, or the volume imported was multiplied by the specific duty; the percentage which this figure was of the total value imported was derived and that percentage was then added to the ad valorem duty quoted to obtain the ad valorem equivalent of the whole duty. In recording these equivalent ad valorem rates for the years in which the Tariff Act of 1930 has been in force, the spread or range of the rates from high to low years was taken rather than an average, since the fluctuation of the weight of the duty is significant, and also since an average would distort the picture.

Tables I and II show the results of the procedure just listed. Column 2 in the tables gives the code number of the different items as they are listed in the Bureau of Labor Statistics wholesale price series. Column 4 gives the code numbers used for corresponding items in the Department of Commerce publication, *Statistical Classification of Imports into the United States*, and in the Tariff Commission publication, *Comparative Statistics of Imports into the United States for Consumption*. The code numbers are given without decimal points as they are arranged without reference to decimal points in the *Statistical Classification*. Columns 5 and 6 give the paragraph in which the item appears and the rate according to the Tariff Act of 1930. In cases where a rate appears in parentheses the rate so enclosed is the changed rate according to the reciprocal trade agreements. Column 7 gives in terms of ad valorem equivalents the range of protection arising from the variations in price and the modification brought about by rate changes made by trade agreements.

The following tariff classification of these commodities should not be used as a final analysis for importers because of inadequate description of the separate items as well as the existence of changes arising out of trade agreements and Treasury decisions.

TABLE I.[1]—*Bureau of Labor Statistics wholesale price series, grouped according to frequency of price change, with tariff information on the listed or similar commodities for years 1931–36, inclusive*

GROUP I

| No. | Bureau of Labor Statistics[2] code No. | Commodity with brief description | Tariff information | | | |
|---|---|---|---|---|---|---|
| | | | Code No. | Tariff paragraph | Tariff rate | Equivalent ad valorem range |
| 1 | 97 | Corn flakes | 10917 | 732 | 20% (15%) | 15–20. |
| 2 | 99 | Wheat cereal | 10917 | 732 | 20% (15%) | 15–20. |
| 3 | 154 | Ginger ale | 17500 | 808 | 15¢ gal | 13–17. |
| 4 | 156 | Sodas | 17760 | 808 | 15¢ gal | 13–17. |
| 5 | 226 | Gloves, men's mocha, unlined | 04120 | 1532 | 50% (min.) | 62–73. |
| 6 | 231 | Collars, men's soft | 31135 | 919 | 37.5% | 37½. |
| 7 | 232 | Collars, men's stiff | 31135 | 919 | 37.5% | 37½. |
| 8 | 241 | Shirts, men's dress, broadcloth | 31131 | 919 | 45% | 45. |
| 9 | 293 | Underwear, men's, 60 percent wool, 40 percent cotton | 36371 | 1114c | 50¢ lb. and 50% (30%) | 45–65. |
| 10 | 367 | Grain binder, 6-foot, with bundle carriage | 78919 | 1604 | Free | Free. |
| 11 | 368 | Cultivator, riding, 8 shovels, pin break | 78600 | 1604 | do | Do. |
| 12 | 369 | Grain drill, 12 by 7, plain single disk | 78915 | 1604 | do | Do. |
| 13 | 370 | Engine, 3 horsepower, agricultural implement | 78919 | 1604 | do | Do. |
| 14 | 371 | Forks, hay, 3 tines | 61589 | 373 | 30% (15%) | 15–30. |
| 15 | 372 | Harrow, disk, 14 by 16, with scrapers | 78900 | 1604 | Free | Free. |
| 16 | 373 | Harrow, peg-tooth | 78900 | 1604 | do | Do. |
| 17 | 375 | Combine thresher, 10-foot, motor-driven | 78800 | 1604 | do | Do. |
| 18 | 376 | Hoe, garden, 7-inch | 61589 | 373 | 30% (15%) | 15–30. |
| 19 | 377 | Hay loader, 6-foot, windrow with carriage | 78919 | 1604 | Free | Free. |
| 20 | 378 | Mower, 5-foot, regular lift | 78903 | 1604 | do | Do. |
| 21 | 379 | Corn picker | 78918 | 1604 | do | Do. |
| 22 | 380 | Corn planter, 30-inch open wheels, 80 rods | 78915 | 1604 | do | Do. |
| 23 | 381 | Plow tractor, 14-inch | 78910 | 1604 | do | Do. |
| 24 | 385 | Rake, 14 teeth, steel | 61589 | 373 | 30% (15%) | 15–30. |
| 25 | 386 | Rake, self-dump, 10-foot, 26 teeth | 78902 | 1604 | Free | Free. |
| 26 | 387 | Rake, side delivery | 78902 | 1604 | do | Do. |
| 27 | 389 | Corn sheller, power, 2-hole | 78915 | 1604 | do | Do. |
| 28 | 391 | Spade, garden | 61581 | 373 | 30% | 30. |
| 29 | 392 | Manure spreader | 78919 | 1604 | Free | Free. |
| 30 | 393 | Grain thresher, steel, 22 by 38, complete | 78904 | 1604 | do | Do. |
| 31 | 394 | Tractor, 10–20 horsepower | 78700 | 1604 | do | Do. |
| 32 | 398 | Angle bars, steel | 60810 | 312 | 0.2¢ lb | 15–27. |
| 33 | 399 | Augers, 1-inch | 61572 | 396 | 45% | 45. |
| 34 | 402 | Bar iron, refined, per pound | 60213 | 303 | 0.8¢ lb. (0.5¢ lb.) | 16–26. |
| 35 | 417 | Chisels, 1-inch | 61572 | 396 | 45% | 45. |
| 36 | 418 | Files, metal, 8-inch | 61534 | 362 | 77.5¢ doz. (45¢ doz.) | 11–30. |
| 37 | 421 | Cork knives, 15 pounds to dozen | 61585 | 373 | 30% (20%) | 20–30. |
| 38 | 425c | Iron ore | 60010 | 1700 | Free | Free. |
| 39 | 439 | Rails, steel | 60901 | 322 | 0.1¢ lb | 7–11. |
| 40 | 456 | Vises | 61575 | 396 | 45% | 45. |
| 41 | 474 | Nickel electrolytic cathode, 98–99 percent | 65420 | 389 | 25% | 25. |
| 42 | 497 | Concrete blocks, plain, 8 by 8 by 16 inches | 54215 | 214 | 30% | 30. |
| 43 | 536 | Barytes, ground | 84021 | 67 | $7.50 ton | 55–78. |
| 44 | 538 | Bone black, powdered | 09913 | 69 | 20% | 20. |
| 45 | 540 | Iron oxide, black | 84001 | 73 | 10% | 10. |
| 46 | 550 | Lithopone | 84100 | 77 | 1.75¢ lb. (1.5¢ lb.) | 48–65. |
| 47 | 557 | Whiting, imported chalk | 84025 | 20 | 0.1¢ lb. (0.2¢ lb.) | 72–171. |
| 48 | 559 | Asphalt, bulk | 53940 | 1710 | Free | Free. |
| 49 | 560 | Board, plaster | 41090 | 1803 | do | Do. |
| 50 | 585 | Carbon dioxide, liquid | 82212 | 1 | 1¢ lb | 1–2. |
| 51 | 590 | Coal-tar products, salicylic acid | 80202 | 27a | 7¢ lb. and 40% | 45–46. |
| 52 | 592 | Acid, sulphuric, 66° | 82060 | 1601 | Free | Free. |
| 53 | 595 | Aluminum sulphate | 838110 | 6 | 0.2¢ lb | 2–11. |
| 54 | 601 | Baking powder, 6–10-pound cans, in case | 83430 | 1766 | Free | Free. |
| 55 | 603 | Bleaching powder | 83100 | 14 | 0.3¢ lb | 9–11. |
| 56 | 607 | Calcium carbide | 82471 | 16 | 1¢ lb | 27–48. |
| 57 | 609 | Coal-tar products, black | 80509 | 28a | 7¢ lb. and 45% | 50–51. |
| 58 | 611 | Coal-tar products, indigo, 20 percent paste | 80509 | 28a | 7¢ lb. and 45% | 50–51. |
| 59 | 626 | Sodium bicarbonate | 83430 | 1766 | Free | Free. |
| 60 | 630 | Sulphur, crude | 59334 | 1777 | do | Do. |
| 61 | 649 | Peroxide of hydrogen, 4-ounce bottle | 838622 | 5 | 25% | 25. |
| 62 | 676 | Carvers, stag handles, 9-inch | 61308 | 355 | 8¢ each and 45% | 69–77. |
| 63 | 677 | Knives, and forks, cocobola handles | 61351 | 355 | 8¢ each and 45% | 69–77. |
| 64 | 687 | Ironers, electric, automatic, 30-inch roll | 70999 | 353 | 35% | 35. |
| 65 | 694 | Sewing machines, treadle | 75510 | 372 | 15% | 15. |
| 66 | 698 | Ranges, electric | 70926 | 353 | 35% (25%) | 25–35. |
| 67 | 702c | Dinner sets | 53502 | 212 | 10¢ doz. and 70% | 84–93. |
| 68 | 704 | Nappies, common, 4-inch | 52762 | 218f | 60% | 60. |
| 69 | 755 | Batteries, radio, dry "A" | 70921 | 353 | 35% | 35. |
| 70 | 759 | Cigar boxes, veneer | 42010 | 405 | 20% | 20. |
| 71 | 772 | Shipping cases, rough, pine | 42069 | 407 | 15% | 15. |
| 72 | 775 | Soap, laundry | 87199 | 80 | 15% | 15. |
| 73 | 777 | Soap, toilet, 3- to 3½-ounce | 87122 | 80 | 30% | 30. |
| 74 | 781 | Tobacco, plug, 11-ounce plug | 26299 | 603 | 55¢ lb | 29–67. |
| 75 | 782 | Tobacco, smoking, gross of 1-ounce bags | 26299 | 603 | 55¢ lb | 29–67. |

GROUP II

| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | 95 | Bread, loaf before baking | 10790 | 1623 | Free | Free. |
| 2 | 96 | do | 10790 | 1623 | do | Do. |
| 3 | 225 | Leather belting, 1-inch | 06999 | 1531 | 35% | 35. |
| 4 | 227 | Gloves, unlined, short cuff | 04120 | 1532a | 50% | 50 |
| 5 | 240 | Overcoat, 30-ounce, 3-button, yoke lined, heavy | 36401 | 1115a | 50¢ lb. and 50% | 56–58 |
| 6 | 336 | Cotton thread, 6-cord, white 100 yards | 30300 | 902 | 20% | 20 |
| 7 | 337 | Shoe thread, linen, per pound, 10's | 32723 | 1004b | 40% | 40. |
| 8 | 374 | Harrow, 17-tooth | 78900 | 1604 | Free | Free. |
| 9 | 382 | Plows, walking, 1-horse | 78600 | 1604 | do | Do. |
| 10 | 383 | Plows, walking, 2-horse | 78600 | 1604 | do | Do. |
| 11 | 384 | Pumps, agricultural, pitcher spout | 78919 | 1604 | do | Do. |
| 12 | 388 | Cream separator, valued over $50 | 77200 | 372 | 25% (12½%) | 12½–25. |

[1] The grouping in this table corresponds to that given in appendix 2, table II.

[2] For description of items whose number is followed by "c", see appendix 2, table I.

TABLE I.—*Bureau of Labor Statistics wholesale price series, grouped according to frequency of price change, with tariff information on the listed or similar commodities for years 1931–36, inclusive*— Continued

GROUP II—Continued

| No. | Bureau of Labor Statistics code No. | Commodity with brief description | Tariff information | | | |
|---|---|---|---|---|---|---|
| | | | Code No. | Tariff paragraph | Tariff rate | Equivalent ad valorem range (percent) |
| 13 | 389 | Shovels, cast-steel, black, longhandle | 61581 | 373 | 30% | 30. |
| 14 | 395 | Farm tractor, 15–30 horsepower | 78700 | 1604 | Free | Free. |
| 15 | 396 | Wagon, 2-horse, agricultural | 78908 | 1604 | do | Do. |
| 16 | 397 | Windmill, steel, 8-foot diameter, aeromotor | 78019 | 1604 | do | Do. |
| 17 | 400 | Axes, single-bit, 3½–4½ pounds | 61569 | 396 | 45% | 45. |
| 18 | 415 | Sanitary cans, tin | 62095 | 339 | 40% | 40. |
| 19 | 419 | Hammer, 1-pound | 61575 | 396 | 45% | 45. |
| 20 | 420 | Hatchet | 61569 | 396 | 45% | 45. |
| 21 | 437 | Planes, jackplane | 61572 | 396 | 45% | 45. |
| 22 | 443 | Saws, cross-cut, 6-foot | 61518 | 340 | 20% (15%) | 15–20. |
| 23 | 444 | Saws, 26-inches, skewback | 61518 | 340 | 20% (15%) | 15–20. |
| 24 | 502 | Brick, sandlime, per 1,000 | 53906 | 201b | $1.25 per M | 4–11. |
| 25 | 505 | Floor tiles, ceramic unglazed | 53811 | 202a | 50% | 50. |
| 26 | 507 | Cement roofing tile, 9 by 15 | 53805 | 202 | 60% | 60. |
| 27 | 508 | Wall tile, glazed | 53813 | 202a | 50% | 50. |
| 28 | 530 | Enamel, paint | 84318 | 66 | 25% | 25. |
| 29 | 534 | Roof and barn paint, red | 84319 | 66 | 25% | 25. |
| 30 | 535 | Varnish | 84113 | 75 | 25% | 25. |
| 31 | 541 | Lampblack | 84202 | 71 | 20% | 20. |
| 32 | 543 | Chrome green, light | 84213 | 70 | 20% | 20. |
| 33 | 563 | Door frames | 42899 | 412 | 33.3% | 33⅓. |
| 34 | [3] 565 | Glass, plate, polished, 3–5 square feet | 52201 | 222a | 17¢ (11.3¢ sq. ft.) | 5–78. |
| 35 | [3] 566 | Glass, plate, polished, 5–10 square feet | 52203 | 222a | 19.75¢ (13.2¢ sq. ft.) | 64–103. |
| 36 | 578 | Slate, roofing, 10 by 20-inch | 51114 | 235 | 25% | 25. |
| 37 | 581 | Crushed stone, 1½-inch | 54229 | 214 | 30% | 30. |
| 38 | 586 | Acid, muriatic, 20° | 82112 | 1601 | Free | Free. |
| 39 | 587 | Acid, nitric, 42° | 82115 | 1601 | do | Do. |
| 40 | 599 | Arsenic, powdered arsenious oxide | 82010 | 1614 | do | Do. |
| 41 | 600 | Baking powder, case of 24 1-pound cans | 83130 | 1766 | do | Do. |
| 42 | 608 | Calcium, chloride, 73–75 percent | 83710 | 1641 | do | Do. |
| 43 | 610 | Coal-tar products, brown colors, sulphur | 80508 | 28a | 7¢ lb. and 45% | 50–53 (50–51). |
| 44 | 628 | Sodium silicate, 40° | 83539 | 81 | 0.357¢ lb. | 9–19 (9–18). |
| 45 | 642 | Chloroform | 838310 | 18 | 4¢ lb. | 1–2. |
| 46 | 644 | Epsom salts, in barrels | 83126 | 49 | 0.75¢ lb. | 115–132. |
| 47 | 661 | Potash, muriate, 80–85 percent, KCl | 85210 | 1745 | Free | Free. |
| 48 | 678 | Carpets, Axminster, ¾-yard, wool | 36711 | 1117a | 60% | 60. |
| 49 | 679 | Carpets, Brussels, 5-frame, wool | 36712 | 1117a | 60% | 60. |
| 50 | 681 | Linoleum, felt base, 2 yards wide | 39810 | 1020 | 35% | 35. |
| 51 | 685 | Heating appliances, electric irons | 70907 | 339 | 40% | 40. |
| 52 | 690 | Wall oilcloth, plain tints | 39714 | 907 | 40% (30%) | 30–40. |
| 53 | 693 | Electric sewing machines | 70909 | 353 | 35% | 35. |
| 54 | 705 | Pitchers, ½-gallon, glass | 52762 | 218f | 60% | 60. |
| 55 | 706 | Plates, white, granite, 7-inch | 53710 | 211 | 10¢ doz. and 45% | 64–79. |
| 56 | 707 | Teacups, saucers, granite | 53710 | 211 | 10¢ doz. and 45% | 64–79. |
| 57 | 708 | Tumblers, 8–10-ounce | 52762 | 218f | 60% | 60. |
| 58 | 757 | Caskets, metal | 67099 | 397 | 45% | 45. |
| 59 | 758 | Caskets, wood | 42899 | 412 | 33.3% | 33⅓. |
| 60 | 761 | Matches, safety | 97700 | 1516 | 20¢ gross (17.5¢) | 45–109. |
| 61 | 762 | Asbestos pipe covering | 55280 | 1501d | 25% | 25. |
| 62 | 767 | Plate glass mirror, 12 by 24-inch, beveled | 52500 | 223 | 45% | 45. |

GROUP III

| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | 100 | Crackers, plain soda | 10751 | 733 | 30% | 30. |
| 2 | 101 | Cookies, sugar | 10751 | 733 | 30% | 30. |
| 3 | 117 | Pretzels, butter | 10751 | 733 | 30% | 30. |
| 4 | 155 | Grape juice, case of 2 dozen pints | 17710 | 806a | 70¢ gal. | 42–116. |
| 5 | 158 | Cocoa, ½-pound cans | 15021 | 777a | 3¢ lb. (1.5¢ lb.) | 12–27. |
| 6 | 190c | Shoes | 03519 | 1530e | 20% | 20. |
| 7 | 191 | Shoes, child's | 03539 | 1530e | 20% | 20. |
| 8 | 193 | Shoes, youth's | 03549 | 1530e | 20% | 20. |
| 9 | 197 | Shoes, men's calf | 03509 | 1530e | 20% | 20. |
| 10 | 243 | Boys' suits, all wool, 12–14-ounces | 36401 | 1115a | 50¢ lb. and 50% | 56–58. |
| 11 | 244 | Men's suits, 13-ounce serge | 36401 | 1115a | 50¢ lb. and 50% | 56–58. |
| 12 | 247 | Topcoats, 18-ounce | 36401 | 1115a | 50¢ lb. and 50% | 56–58. |
| 13 | 250 | Men's work pants, 2.65 yards to pound | 31123 | 917 | 45% | 45. |
| 14 | 407 | Steel barrels, weight 43 pounds, 35 gallons | 62099 | 397 | 45% | 35. |
| 15 | 409 | Boiler tubes, cold-drawn steel | 60928 | 328 | 25% | 25. |
| 16 | 435 | Pipe, steel, ¾-inch | 60928 | 328 | 25% | 25. |
| 17 | 436 | Pipe, steel, galvanized | 60928 | 328 | 25% | 25. |
| 18 | 455 | Tin plate, 14 by 20 inches, base 100 pounds | 60601 | 310 | 1¢ per lb. | 9–34. |
| 19 | 460 | Fencing, woven wire | 61052 | 317 | 5¢ per lb. | 20–30. |
| 20 | 499 | Fire brick | 53905 | 201a | 25% (15%) | 15–25. |
| 21 | 503 | Silica brick | 53906 | 201b | $1.25 per M | 4–11. |
| 22 | 504 | Drain tile, clay, 1,000 feet | 53832 | 202a | 70% | 70. |
| 23 | 526 | California redwood, 4 by 4, dressed or rough | 11199 | 1803 | Free | Free. |
| 24 | 532 | Paint, house | 84319 | 66 | 25% | 25. |
| 25 | 533 | Paint, porch and deck | 84319 | 66 | 25% | 25. |
| 26 | 542 | Paint, prussian blue | 84210 | 68 | 8¢ lb. | 34–44. |
| 27 | 558 | Zinc, oxide | 84110 | 77 | 1.75¢ lb. | 28–40. |
| 28 | 561 | Board, building wall | 41000 | 1803 | Free | Free. |
| 29 | 564 | Window frames | 42899 | 412 | 33.3% | 33⅓. |
| 30 | 573 | Plaster | 51930 | 205a | $1.40 ton | 9–18. |
| 31 | 584 | Acid, boric | 82210 | 1 | 1¢ lb. | 12–22. |
| 32 | 604 | Borax, crystals, granulated | 83518 | 81 | .125¢ lb. | 1. |
| 33 | 612 | Coal-tar products, jet | 80508 | 28a | 7¢ lb. and 45% | 50–53 (50–51). |
| 34 | 615 | Creosote oil | 80000 | 1651 | Free | Free. |
| 35 | 620 | Potash, caustic, 88–92 percent | 83250 | 78 | 1¢ lb. | 14–19. |
| 36 | 622 | Soda, carbonate, sal | 83523 | 81 | .25¢ lb. | 5–8. |
| 37 | 624 | Salt, sodium chloride | 57241 | 81 | 0.07¢ lb. | 56–81. |
| 38 | 629 | Soda sulphide, 30 percent crystals | 83547 | 81 | .375¢ lb. | 20–26. |
| 39 | 632 | Coal tar products, toluene | 80115 | 1651 | Free | Free. |

[3] Items 565–566 appear in appendix 2, table II, combined into 565c.

TABLE I.—*Bureau of Labor Statistics wholesale price series, grouped according to frequency of price change, with tariff information on the listed or similar commodities for years 1931–36, inclusive*—Continued

GROUP III—Continued

| No. | Bureau of Labor Statistics code No. | Commodity with brief description | Tariff information | | | |
|---|---|---|---|---|---|---|
| | | | Code No. | Tariff paragraph | Tariff rate | Equivalent ad valorem range (percent) |
| 40 | 648 | Opium | 22060 | 59 | $3 lb. | 64–142. |
| 41 | 658 | Phosphate rock, 68 percent | 65198 | 1740 | Free | Free. |
| 42 | 659 | Kainit, 12 4 percent | 85230 | 1745 | do | Do. |
| 43 | 660 | Manure salts, 20 percent | 85240 | 1685 | do | Do. |
| 44 | 662 | Sulphate of potash, 90–95 percent | 85250 | 1745 | do | Do. |
| 45 | 680 | Carpets, Wilton | 36714 | 1117a | 60% | 60. |
| 46 | 682 | Linoleum, rug, felt base, 9 by 12 | 39810 | 1020 | 35% | 35. |
| 47 | 684 | Linoleum | 39810 | 1020 | 35% | 35. |
| 48 | 686 | Heating appliances, electric irons | 70907 | 339 | 40% | 40. |
| 49 | 701 | Tablecloths, 64 by 64 | 30823 | 910 | 30% | 30. |
| 50 | 710 | Vacuum cleaner, without attachments | 70690 | 353 | 35% | 35. |
| 51 | 711 | Washing machine, electric, enamel | 70999 | 353 | 35% | 35. |
| 52 | 743 | Book paper, per 100 pounds | 47120 | 1410 | 25¢ lb. and 10% | 18–22. |
| 53 | 744 | Paper newsprint, rolls | 47110 | 1772 | Free | Free. |
| 54 | 745 | Tissue paper, white | 47289 | 1404 | 6¢ lb. and 20% | 31–39. |
| 55 | 746 | Paper, wrapping, manila, jute | 47230 | 1409 | 30% (25%) | 25–30. |
| 56 | 770 | Garden hose, $\frac{5}{8}$-inch, 2-braid, foot | 20672 | 1537b | 25% | 25. |
| 57 | 771 | Rubbers, men's | 20311 | 1537b | 25% | 25. |
| 58 | 779 | Cigarettes, per 1,000 | 26230 | 605 | $4.50 lb. and 25% | 101–121. |

GROUP IV

| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | 45 | Milk, 3.6 percent butter fat | 00380 | 707 | 6.5¢ gal | 22–43 |
| 2 | 92 | Bread, before baking | 10790 | 1623 | Free | Free. |
| 3 | 94 | do | 10790 | 1623 | do | Do. |
| 4 | 176 | Salt, 280-pound barrels | 57240 | 81 | 11¢ lb. | 15–28. |
| 5 | 194c | Shoes, men's | 03509 | 1530e | 20% | 20. |
| 6 | 206c | Shoes, women's | 03529 | 1530e | 20% | 20. |
| 7 | 208 | do | 03529 | 1530e | 20% | 20. |
| 8 | 229 | Suitcases | 06920 | 1531 | 35% | 35. |
| 9 | 230 | Traveling bags | 06920 | 1531 | 35% | 35. |
| 10 | 242 | Shirts, 3 85 yards to pound | 31131 | 919 | 45% | 45. |
| 11 | 245 | Suits, serge, 15-ounce | 36401 | 1115a | 50¢ lb. and 50% | 56–58. |
| 12 | 252 | Table damask, cotton, 1 92 yards per pound | 30823 | 910 | 30% | 30. |
| 13 | 264 | Nainsook, muslin, cotton | 3050's | 904b | 60¢ lb. | 34–43. |
| 14 | 269 | Filling sateen, 36-inch, 4.37 yards to pound | 3060900 | 904c | 47½% | 47½. |
| 15 | 292 | Underwear, cotton, 12 pounds | 31123 | 917 | 45% | 45. |
| 16 | 294 | Underwear, 33 percent worsted, 16 pounds to dozen | 36371 | 1114c | 50¢ lb. and 50% (30%) | 45–65. |
| 17 | 309 | Dress goods, women's 9½-ounce, wool | 36051 | 1109a | 50¢ lb. and 55% | 86–87. |
| 18 | 315 | Flannel, wool 6½-ounce 54-inch | 36050 | 1109a | 50¢ lb. and 50% | 105–113. |
| 19 | 330 | Artificial leather, 17½-ounce, 1.32 | 32370 | 923 | 40% | 40. |
| 20 | 331 | Artificial leather, 7-ounce, 3 60 | 32370 | 923 | 40% | 40. |
| 21 | 334 | Rope, sisal, ¾-inch diameter | 34170 | 1005a | 2¢ (1¢ lb.) | 16–24. |
| 22 | 338 | Twine, binder, sisal, 50-pound bale | 34171 | 1005a | 2¢ and 15% (1¢ lb. and 7½%) | 37 6–40. |
| 23 | 410 | Machine bolts | 62050 | 330 | 1¢ per lb. | 25–35. |
| 24 | 413 | Track bolts | 62050 | 330 | 1¢ lb. | 25–35. |
| 25 | 422 | Door knobs, metal | 62099 | 397 | 45% | 45. |
| 26 | 441 | Rivets, small, 7/16-inch | 62054 | 332 | 1¢ lb. | 8–35. |
| 27 | 453 | Terneplate, 20 by 28-inch, base 300 pounds | 60603 | 310 | 1¢ per lb | 9–34. |
| 28 | 469 | Aluminum, 98–99 percent | 63020 | 374 | 4¢ per lb. | 21–25. |
| 29 | 496 | Laundry tubs, cement composition, 48 by 24 inches | 54227 | 214 | 30% | 30. |
| 30 | 506 | Tile, hollow, building | 53832 | 202a | 70% | 70. |
| 31 | 509 | Cement, portland, barrel | 51810 | 205b | 0.06¢ lb. (0.045¢ lb.) | 18–30. |
| 32 | 513 | Lumber, chestnut, 4 by 4 common | 41199 | 1803 | Free | Free. |
| 33 | 531 | Paint, inside flat, house | 84319 | 66 | 25% | 25. |
| 34 | 548 | Lead, carbonate, white, in oil | 84219 | 72 | 2.5¢ lb. (2 1¢ lb.) | 21–34. |
| 35 | 562 | Doors, pine | 42899 | 412 | 33 3% | 33⅓. |
| 36 | 567c | Glass, window | 520's | 219 | Various per lb. | 37–50. |
| 37 | 569 | Gravel, ton | 53958 | 1775 | Free | Free. |
| 38 | 571 | Lime, hydrated | 51710 | 203 | 12¢ (.08¢ per lb.) | 17–25. |
| 39 | 572 | Pipe, sewer, 8-inch C L (iron) | 60910 | 327 | 25% (15%) | 15–25. |
| 40 | 579 | Sand, building | 53957 | 1775 | Free | Free. |
| 41 | 580 | Window sash, white pine | 42899 | 412 | 33.3% | 33⅓. |
| 42 | 598 | Coal tar products, anilin oil | 80478 | 27a1 | 7¢ lb. and 40% | 42–46. |
| 43 | 605 | Calcium lime, acetate | 82470 | 16 | 1¢ lb. | 40–44. |
| 44 | 613 | Copperas | 83717 | 1675 | Free | Free. |
| 45 | 617 | Logwood extract, solid | 23315 | 38 | 15% | 15. |
| 46 | 618 | Coal-tar products, naphthalene, flake, pound | 80108 | 1651 | Free | Free. |
| 47 | 625 | Soda ash, 58 percent | 83523 | 81 | 0 25¢ lb | 5–8. |
| 48 | 627 | Soda caustic, 76 percent | 83533 | 81 | 0 5¢ lb | 3–4. |
| 49 | 646 | Iodine, resublimed | 838630 | 44 | 10¢ lb. | (Negligible imports.) |
| 50 | 652 | Quinine, sulphate, 100-ounce tins | 81020 | 1748 | Free | Free. |
| 51 | 654 | Alkaloids, strychnine | 81120 | 86 | 20¢ per oz. | No information 1931–35. |
| 52 | 655 | Zinc chloride, granular | 838933 | 93 | 1.3¢ lb. | 35–45. |
| 53 | 673 | Blankets, cotton, part wool, 3½-pound | 30843 | 911a | | 30. |
| 54 | 674 | Blankets, 4–5 pound | 36104 | 1111 | 33¢ and 37½% | 65–67 |
| 55 | 675 | Comforters, sateen cover, woolfilling | 36104 | 1111 | 33¢ and 37½% | 65–67. |
| 56 | 683 | Linoleum, inlaid | 39800 | 1020 | 42% | 42. |
| 57 | 695 | Window shades, 6 foot by 36 inches, water color | 39715 | 907 | 30% | 30. |
| 58 | 756 | Storage battery, 13-plate | 70920 | 320 | 40% | 40. |
| 59 | 768 | Rubber heels | 20984 | 1537b | 25% | 25. |
| 60 | 769 | do | 20984 | 1537b | 25% | 25. |
| 61 | 774 | Soap, 100-11-ounce cakes | 87199 | 80 | 15% | 15. |

GROUP V

| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | 93 | Bread, before baking | 10790 | 1623 | Free | Free. |
| 2 | 133 | Asparagus, canned 2½'s | 12390 | 775 | 35% | 35. |
| 3 | 169 | Jelly, grape, 8½, 6 to case | 13295 | 751 | 35% | 35. |
| 4 | 171 | Molasses, per gallon, average sugar content | 16352 | 502 | $1.35 per 100 gal. | 20–28 4 |
| 5 | 174 | Peanut butter, 50-pound tins | 13809 | 759 | 7¢ lb. | 21–50 (negligible). |
| 6 | 177 | Soup, canned, tomato, 1-pound, 1-ounce | 12531 | 775 | 35% | 35. |

TABLE 1.—*Bureau of Labor Statistics wholesale price series, grouped according to frequency of price change, with tariff information on the listed or similar commodities for years 1931–36, inclusive*—Continued

GROUP V—Continued

| No. | Bureau of Labor Statistics code No. | Commodity with brief description | Tariff information | | | |
|---|---|---|---|---|---|---|
| | | | Code No. | Tariff paragraph | Tariff rate | Equivalent ad valorem range (percent) |
| 7 | 178 | Corn starch, 48 1-pound packages | 28150 | 83 | 1.5¢ per lb | 2–77. |
| 8 | 182 | Tea, Formosa | 15210 | 1783 | Free | Free. |
| 9 | 201c | Shoes | 03709 | 1530e | 20% | 20. |
| 10 | 205c | Shoes, women's | 03729 | 1530e | 20% | 20. |
| 11 | 219 | Leather, kid, glazed | 03335 | 1530c | 25% | 25. |
| 12 | 228 | Harness, set | 06903 | 1530f | 15% | 15. |
| 13 | 248 | Pants, boy's wool | 36400 | 1115a | 33¢ and 45% | 58–61. |
| 14 | 249 | Pants, men's, serge, 12½-ounce | 36401 | 1115a | 50¢ lb. and 50% | 56–58. |
| 15 | 260 | Gingham, 6.37 yards to pound (bleached) | 3057s | 904 | Various | 34–43. |
| 16 | 265c | Rayon | 38304 | 1306 | 45¢ lb. and 40% (45%) | 75–102 (75–82). |
| 17 | 305 | Spun silk, 200 2 gray | 37053 | 1202 | 40% | 40. |
| 18 | 312 | Suiting, 12-ounce, 56-inch | 36051 | 1109a | 50¢ lb. and 55% | 86–87. |
| 19 | 314 | Dress goods, cotton warp | 36032 | 1109 | 50¢ lb. and 55% | 77–85 (77–81). |
| 20 | 316 | Overcoating, per yard, 28-ounce | 36051 | 1109 | 50¢ lb. and 55% | 86–94 (86–87). |
| 21 | 333 | Rope, manila, 1-pound, ¾-inch diameter | 34175 | 1005b | 40% (20%) | 20–40. |
| 22 | 340 | Twine, Java sisal | 34175 | 1005b | 40% (20%) | 20–40. |
| 23 | 341c | Carpet yarn, jute, 11 16 | 32441 | 1003 | 4¢ lb | 59.6–63. |
| 24 | 364 | Petroleum, crude, barrel | 50510 | 1733 | Free | Free. |
| 25 | 411 | Plow bolts, 2 by $\frac{5}{8}$ inch | 62050 | 330 | 1¢ lb | 25–35. |
| 26 | 412 | Stove bolts | 62050 | 330 | 1¢ lb | 25–35. |
| 27 | 423 | Locks, 3½-inch sets | 62080 | 384 | $2 doz. and 20% | 45–55. |
| 28 | 429 | Pig iron, ferromanganese, 80 percent | 60031 | 301 | $1 12.5 tons | 3–4. |
| 29 | 439 | Steel skelp, grooved | 60390 | 307 | 0.5¢ lb. (.35¢ lb.) | 28–53. |
| 30 | 450 | Spikes, ½-inch and more | 61120 | 331 | 0.1¢ lb | 11–17. |
| 31 | 451 | Steel, tie plate | 60005 | 322 | 0.25¢ lb | 9–24. |
| 32 | 471 | Babbit metal, per pound | 65061 | 392 | 2.125¢ lb | 2–7. |
| 33 | 494 | Sinks | 62069 | 397 | 45% | 45. |
| 34 | 500 | Brick, front, light-colored | 53907 | 201b | 5% | 5. |
| 35 | 501 | Paving blocks, 3½-inch | 53906 | 201b | $1.25 per M | 4–12 (4–10). |
| 36 | 529 | Cypress shingles | 41922 | 1760 | Free | Free. |
| 37 | 539 | Carbon black | 84201 | 71 | 20% | 20. |
| 38 | 544 | Chrome yellow | 84213 | 70 | 25% | 25. |
| 39 | 553 | Putty, 1-5-pound tins | 84026 | 20 | 0.75¢ lb. (0.5¢ lb.) | 30–73. |
| 40 | 582 | Tar, pine | 21193 | 97 | 1¢ lb | 8–18 (10–18). |
| 41 | 583 | Acetic acid, 28 percent | 82000 | 1 | 1.375¢ lb | 3–42. |
| 42 | 596 | Ammonia, anhydrous | 82132 | 7 | 2.5¢ lb | (No imports.) |
| 43 | 597 | Ammonia, aqua | 82432 | 7 | 2.5¢ lb | Do. |
| 44 | 616 | Formaldehyde | 838610 | 40 | 8¢ lb | 31–32 (negligible). |
| 45 | 623 | Salt cake, ground | 83350 | 1766 | Free | Free. |
| 46 | 637 | Alcohol, ethyl, grain, 188 proof | 82313 | 4 | 15¢ gal | 3–12. |
| 47 | 638 | Alkaloids, caffeine | 81110 | 15 | $1.25 lb. (90¢ lb.) | 200 (negligible). |
| 48 | 641 | Chlorine | 8305 | | | (Negligible imports.) |
| 49 | 650 | Phenol, carbolic acid | 80200 | 27b | 3.5¢ lb. and 20% | 33–63. |
| 50 | 651 | Potash, iodine | 83306 | 78 | 25¢ lb | 9–19. |
| 51 | 653 | Soda phosphate | 83429 | 81 | 1.5¢ (1¢ lb.) | 6–27. |
| 52 | 667c | Fertilizer | 85000 | 1685 | Free | Free. |
| 53 | 672 | Blankets, cotton, 2-pound | 30843 | 911a | 30% | 30. |
| 54 | 688 | Oil cloths, 12-inch | 39714 | 907 | 30% | 30. |
| 55 | 689 | Oil cloths, table | 39711 | 907 | 30% | 30. |
| 56 | 748 | Wood pulp, unbleached | 46000 | 1716 | Free | Free. |
| 57 | 750 | Soda, bleached, wood pulp | 46080 | 1716 | do. | Do. |
| 58 | 760 | Matches, nonsafety | 97700 | 1516 | 20¢ (17.5¢ gross) | 45–109. |
| 59 | 778 | Starch, laundry | 28159 | 83 | 1.5¢ lb | 20–49. |

GROUP VI

| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | 43 | Milk, 3.5 percent | 00380 | 707 | 6.5¢ gal | 22–43. |
| 2 | 44 | Milk, 3.7 percent | 00380 | 707 | 6.5¢ gal | 22–43. |
| 3 | 114 | Macaroni and spaghetti (tins) | 10771 | 725 | 3¢ lb | 18–22. |
| 4 | 120 | Apples, canned, 10's | 13302 | 734 | 2.5¢ lb | 13–70. |
| 5 | 122 | Cherries, canned, 2½'s, 24 to case | 13170 | 737 | 9.5¢ lb. and 40% (20%) | 72–113 (95–113). |
| 6 | 125 | Pineapples, canned, 2½'s | 13091 | 747 | 2¢ lb | 40–72. |
| 7 | 134 | Beans, canned, 18 ounces | 12392 | 765 | 3¢ lb | 30–65 (46–65). |
| 8 | 162 | Salmon, pink, No. 1, 48 to case | 00671 | 718b | 25% | 25. |
| 9 | 220 | Harness leather | 03030 | 1530b(3) | 12½% (10%) | 10–12½. |
| 10 | 258 | Cotton flannel, bleached, 4.5 yards per pound | 3057s | 904 | Various | 34–43. |
| 11 | 266 | Percale, gray, yard 38½ inches wide | 3057s | 904b | do. | 34–43. |
| 12 | 275 | Madras, woven, 4.6 yards per pound (bleached) | 3057s | 904 | do. | 34–43. |
| 13 | 280 | Toweling, cotton, 4-ounce (bleached) | 3057s | 904 | do. | 34–43. |
| 14 | 286 | Hosiery, cotton, 164-needle | 31101 | 916a | 50% | 50. |
| 15 | 287 | Hosiery, cotton, 220-needle, 5-ounce | 31101 | 916a | 50% | 50. |
| 16 | 289 | Hosiery, silk, 240-needle | 37370 | 1208 | 60% | 60. |
| 17 | 291 | Underwear, cotton, 12–12½ pounds | 31121 | 917 | 45% (30%) | 30–45. |
| 18 | 310 | Flannel, wool | 36032 | 1109 | 50¢ lb. and 55% | 77–85 (77–81). |
| 19 | 311 | Dress goods, women's wool | 36032 | 1109 | 50¢ lb. and 55% | 77–85 (77–81). |
| 20 | 313 | do. | 36032 | 1109 | 50¢ lb. and 55% | 77–85 (77–81). |
| 21 | 317 | Overcoating, wool, 18-ounce | 36051 | 1109 | 50¢ lb. and 55% | 86–94 (86–87). |
| 22 | 318c | Suitings, serge | 36030 | 1109 | 50¢ lb. and 50% | 85–86. |
| 23 | 322 | Suitings, 12-ounce serge | 36030 | 1109 | 50¢ lb. and 50% | 85–86. |
| 24 | 346 | Coal | 50000 | 1650 | Free | Free. |
| 25 | 350c | Coke | 50080 | 1650 | do. | Do. |
| 26 | 401 | Bar iron | 60213 | 303 | 0.8¢ (0.5¢ lb.) | 16–26. |
| 27 | 405 | Steel, sheet bars | 60080 | 304 | 0.3¢ lb. (0.25¢ lb.) | 20–44. |
| 28 | 408 | Steel billets | 60421 | 304 | 0.5¢ lb. (0.4¢ lb.) | 20–23. |
| 29 | 414 | Butts, wrought steel, plated | 62070 | 397 | 45% | 45. |
| 30 | 416 | Iron castings, malleable | 61138 | 327 | 20% | 20. |
| 31 | 433 | Pig iron | 60030 | 301 | $1.125 ton | 7–12. |
| 32 | 440 | Rivets, large ½-inch and more | 62054 | 332 | 1¢ lb | 8–35. |
| 33 | 442 | Wire rods | 60360 | 315 | 0.3¢ lb. (0.25¢ lb.) | 20–23. |
| 34 | 452 | Steel, structural shapes | 60910 | 312 | 0.2¢ lb | 15–27. |
| 35 | 481 | Zinc, sheet | 65590 | 394 | 2¢ lb | 27–48. |
| 36 | 490 | Range boiler, galvanized, sheet steel | 62099 | 397 | 45% | 45. |
| 37 | 493 | Radiator | 62099 | 397 | 45% | 45. |

TABLE I.—*Bureau of Labor Statistics wholesale price series, grouped according to frequency of price change, with tariff information on the listed or similar commodities for years 1931–36, inclusive*—Continued

GROUP VI—Continued

| No. | Bureau of Labor Statistics code No. | Commodity with brief description | Tariff information | | | |
|---|---|---|---|---|---|---|
| | | | Code No. | Tariff paragraph | Tariff rate | Equivalent ad valorem range (percent) |
| 38 | 495 | Bath tubs | 62099 | 397 | 45% | 45. |
| 39 | 512 | Siding, ¾ by 8 inches, red cedar | 41199 | 1803(1) | Free | Free |
| 40 | 514 | Cypress, 4 by 4 inches, M feet | 41199 | 1803(1) | do | Do. |
| 41 | 525 | Lumber, poplar | 41199 | 1803 | do | Do. |
| 42 | 545 | Ethyl acetate, anhydrous | 838430 | 37 | 3¢ lb | (Negligible |
| 43 | 546 | Copal, Manila | 21099 | 1686 | Free | Free. |
| 44 | 570 | Lime, building | 51712 | 203 | 0.10¢ lb. (0.07¢) | 14–22 (16–22). |
| 45 | 594 | Menthanol, wood alcohol, 95 percent | 82316 | 4 | 18¢ gal | 5–57 (5–30 Neg.). |
| 46 | 602 | Benzine | 80103 | 1651 | Free | Free. |
| 47 | 606 | Calcium arsenate | 83709 | 1642 | do | Do. |
| 48 | 621 | Quebracho extract, solid, 63 percent | 23440 | 38 | 15% | 15. |
| 49 | 635 | Citric acid, crystals | 82216 | 1 | 17¢ lb | 56–137 (79–137). |
| 50 | 740 | Box board, chip | 46929 | 1750 | Free | Free. |
| 51 | 742 | Box board, ton, 85 pounds | 41199 | 1803(1) | do | Do. |
| 52 | 747 | Wood pulp, unbleached | 46000 | 1716 | do | Do. |
| 53 | 749 | do | 46000 | 1716 | do | Do. |
| 54 | 754 | Barrel, red oak, unlined | 42067 | 407 | 15% | 15. |
| 55 | 773 | Soap flakes, laundry | 87199 | 80 | 15% | 15. |
| 56 | 776 | Powdered soap, laundry | 87199 | 80 | 15% | 15. |

GROUP VII

| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | 89 | Milk, condensed, sweet, 48 14-oz | 00401 | 708a | 2.75¢ lb | 42–63. |
| 2 | 91 | Milk, powdered skim | 00411 | 708b | 3¢ lb | 33–77 (33–67). |
| 3 | 128 | Currants, dried, 50-pound box | 13210 | 742 | 2¢ lb | 32–39. |
| 4 | 136 | Peas, canned, 2-pound can | 12363 | 769 | 2¢ lb. (1.5¢) | 8–37 (21–37). |
| 5 | 138 | Beans, string, canned, 2's | 12392 | 765 | 3¢ lb | 46–65. |
| 6 | 139 | Tomatoes, canned, No. 3 | 12380 | 772 | 50% | 50. |
| 7 | 168 | Glucose, corn sirup, 42° | 16542 | 503 | 2¢ lb | 17–35. |
| 8 | 172 | Oleomargarine, uncolored | 00365 | 709 | 14¢ lb | 74–139. |
| 9 | 186 | Olive oil, edible | 14240 | 53 | 8¢ lb | 59–82 (60–82). |
| 10 | 189 | Vinegar, cider | 12540 | 738 | 8¢ pf. gal | 27–39. |
| 11 | 202c | Shoes, men's | 03509 | 1530e | 20% | 20. |
| 12 | 221 | Leather, tanned | 03041 | 1530b(4) | 15% | 15. |
| 13 | 239 | Overalls, cotton | 31135 | 919 | 37.5% | 37.5. |
| 14 | 259 | Cotton flannel, unbleached | 304's | 904b | Various | 36.8–50.3. |
| 15 | 270c | Sheeting, bleached, 10/4 | 305 | 904 | do | 34–43. |
| 16 | 277 | Ticking, 2.05 yards to pound | 304's | 904b | do | 36.8–50.3. |
| 17 | 288 | Hosiery, rayon, 39 gage | 38401 | 1309 | 45¢ lb. and 65% | 75–117. |
| 18 | 290 | Hosiery, silk, 7-thread | 37370 | 1208 | 60% | 60. |
| 19 | 303c | Silk, spun | 37050 | 1202 | 40% | 40. |
| 20 | 335 | Sisal | 34010 | 1684 | Free | Free. |
| 21 | 343 | Coal | 50000 | 1650 | do | Do. |
| 22 | 344 | do | 50000 | 1650 | do | Do. |
| 23 | 345 | do | 50000 | 1650 | do | Do. |
| 24 | 347 | do | 50000 | 1650 | do | Do. |
| 25 | 348 | do | 50000 | 1650 | do | Do. |
| 26 | 362 | Kerosene | 50650 | 1733 | do | Do. |
| 27 | 365 | Petroleum, crude | 50510 | 1733 | do | Do. |
| 28 | 403 | Reinforcing bars, ¾-inch rolled | 60051 | 304 | 0.3¢ lb (0.25¢ lb) | 20–45. |
| 29 | 404 | Steel, merchant bars | 60081 | 304 | 0.5¢ lb. (0.4¢ lb) | 19–26. |
| 30 | 406 | Steel bars, cold-rolled, finished | 60081 | 315 | 0.525¢ lb | 20–21 (negligible). |
| 31 | 424 | Nails, wire | 61121 | 331 | 15% | 15. |
| 32 | 427c | Pig iron | 60030 | 301 | $1.125 ton | 7–12. |
| 33 | 431 | Pig iron, No. 2 | 60030 | 301 | do | 7–12. |
| 34 | 438 | Steel plates, ¼ inch | 60551 | 304 | 0.5¢ lb. (0.4¢) | 16–34. |
| 35 | [4] 457 | Wire, annealed, fence, No. 6–9 | 67980 | 316a | 25% | 25. |
| 36 | [4] 458 | Wire, galvanized, barbed | 60930 | 1800 | Free | Free. |
| 37 | [4] 459 | Wire, galvanized, No. 9 | 61051 | 317 | 0.5¢ lb | 22–30. |
| 38 | 461 | Woodscrews, No. 10, 1-inch iron | 62082 | 338 | 25% | 25. |
| 39 | 491 | Water closets, metal, enameled | 61415 | 339 | 5¢ lb. and 30% | 36–59. |
| 40 | 492 | Lavatories, each | 61415 | 339 | 5¢ lb. and 30% (and 15%) | 36–59. |
| 41 | 498 | Brick, common building | 53906 | 201b | $1.25 M | 4–11 (4–10). |
| 42 | 518 | Lumber, hemlock | 41050 | 401 | $1 M bd. ft. (50¢) | 20–46. |
| 43 | 519 | Lumber, maple, hard | 41194 | 402 | 8% (4%) | 4–8. |
| 44 | 520 | Lumber, oak | 41199 | 1803 | Free | Free. |
| 45 | 521 | Lumber, pine, white | 41070 | 401 | $1 M bd. ft. (50¢) | 17–18. |
| 46 | 524 | Lumber, ponderosa pine | 41070 | 401 | $1 M bd. ft. (50¢) | 17–18. |
| 47 | 537 | Acetate, butyl | 838421 | 37 | 7¢ lb | (No imports, 1931–35). |
| 48 | [5] 574 | Roofing, prepared | 55200 | 1501c | 0.75¢ lb. (0.6¢ lb) | 55–61. |
| 49 | [5] 575 | do | 55200 | 1501c | 0.75¢ lb. (0.6¢ lb.) | 55–61. |
| 50 | [5] 576 | Roofing, slate-surfaced shingles | 51114 | 235 | 25% | 25. |
| 51 | 577 | Roofing, prepared shingles | 55200 | 1501c | 0.75¢ lb. (0.6¢ lb.) | 55–61. |
| 52 | 588 | Oil, red, oleic acid | 08216 | 1 | 20% | 20. |
| 53 | 591 | Acid, stearic, distilled | 08200 | 1 | 25% | 25. |
| 54 | 593 | Alcohol, denatured, 188 proof | 82310 | 4 | 15¢ gal | 7–113. |
| 55 | 619 | Oil, pine, distilled | 22943 | 58 | 25% | 25. |
| 56 | 636 | Acid, tartaric, crystals | 82070 | 1 | 8¢ lb | 36–57 (36–48). |
| 57 | 640 | Castor oil | 22602 | 53 | 3¢ lb | 33–68 (40–68). |
| 58 | 643 | Cream of tartar, powdered | 83230 | 9 | 5¢ lb | 12–51 (12–50). |
| 59 | 645 | Glycerin | 82910 | 42 | 2¢ lb. (1.66¢ lb.) | 6–33 (17–33). |
| 60 | 657 | Bones, ground, 60 percent bone phosphate | 85110 | 1627 | Free | Free. |
| 61 | 664 | Superphosphate, 16 percent basis | 85193 | 1740 | do | Do. |
| 62 | 666c | Fertilizer | 85593 | 1685 | do | Do. |
| 63 | 691 | Pails, galvanized iron, 10-quart | 62099 | 397 | 45% | 45. |
| 64 | 692 | Pillowcases, 64 by 64 | 30860 | 911b | 25% | 25. |
| 65 | 696 | Sheets | 30860 | 911b | 25% | 25. |
| 66 | 741 | Boxboards, Manila lined chip | 46929 | 1750 | Free | Free |

[4] Items 457, 458, and 459 appear in appendix 2, table II, combined into No. 457c.
[5] Items 574, 575, and 576 appear in appendix 2, table II, combined into No. 574c.

TABLE I.—*Bureau of Labor Statistics wholesale price series, grouped according to frequency of price change, with tariff information on the listed or similar commodities for years 1931–36, inclusive*—Continued

GROUP VIII

| No. | Bureau of Labor Statistics code No. | Commodity with brief description | Tariff information | | | |
|---|---|---|---|---|---|---|
| | | | Code No. | Tariff paragraph | Tariff rate | Equivalent ad valorem range (percent) |
| 1 | 06 | Peanuts | 13080 | 739 | 1.25¢ lb | 144–209. |
| 2 | 17 | Seed, alfalfa | 24010 | 763 | 8¢–10¢ lb | 30–108 (40). |
| 3 | 59c | Wool, unwashed | 35060 | 1101a | 24¢ lb | 112–139. |
| 4 | [6] 65 | Wool, grease basis | 35060 | 1101a | 24¢ lb | 112–139. |
| 5 | [6] 66 | Wool, scoured, 56's | 35213 | 1102b | 37¢ lb | 110–131. |
| 6 | [6] 67 | Wool, grease basis, 50's, pound | 35200 | 1102b | 31¢ lb | 80–139. |
| 7 | 90 | Milk, evaporated, 48, 16 ounces in case | 00400 | 708a | 1.8¢ lb | 17–48. |
| 8 | 119 | Rice, clean | 10530 | 727 | 2.5¢ lb | 85–117. |
| 9 | 121 | Apricots, canned | 13315 | 735 | 35% | 35. |
| 10 | 123 | Peaches, canned | 13365 | 745 | 35% | 35. |
| 11 | 124 | Pears, canned | 13369 | 749 | 35% | 35. |
| 12 | 132 | Bananas | 13010 | 1618 | Free | Free. |
| 13 | 135 | Corn, canned | 12499 | 775 | 35% | 35. |
| 14 | 137 | Spinach, canned | 12499 | 775 | 35% | 35. |
| 15 | 141c | Meat, beef | 00180 | 701 | 6¢ lb | 49–87 (49–73). |
| 16 | 145 | Bacon | 00300 | 703 | 3.25¢ lb | 11–16. |
| 17 | 163 | Fish, salmon, canned | 00671 | 718b | 25% | 25. |
| 18 | 164 | Fish, cod, canned (salmon) | 00675 | 718b | 25% | 25. |
| 19 | 165 | Fish, herring, canned | 00712 | 719(4) | 25% | 25. |
| 20 | 166 | Fish, mackerel, canned | 00722 | 719(4) | 25% | 25. |
| 21 | 167 | Fish, salmon, smoked | 00750 | 720a | 25% | 25. |
| 22 | 173 | Oleo oil | 00362 | 701 | 1¢ lb | 6–16. |
| 23 | 184 | Vegetable oil, corn, crude | 14220 | 53 | 20% | 20. |
| 24 | 187 | Peanut oil, crude | 14270 | 54 | 4¢ lb | 65–96. |
| 25 | 188 | Vegetable oil, soybean, crude | 22550 | 54 | 3.5¢ lb | 70–127 (79–127). |
| 26 | 215 | Goatskins | 02410 | 1765 | Free | Free. |
| 27 | 222c | Leather | 03000 | 1530b(1) | 12½% | 12½. |
| 28 | 253 | Denims, cotton, 2.2 yards to pound | 3005 | 904 | Various | 34–43. |
| 29 | 255 | Drillings, cotton, 2.85 yards to pound | 3005 | 904 | ....do | 34–43. |
| 30 | 256 | Duck, 8 ounces, base price 25¢ | 3005 | 904 | ....do | 34–43. |
| 31 | 261c | Muslin, bleached | 3005's | 904b | ....do | 34–43. |
| 32 | [7] 272 | Sheeting, brown, 2.85 yards to pound | 3011's | 904b | ....do | 36.8–50.3. |
| 33 | [7] 273 | Sheeting, 4–4, 3.72 yards to pound | 3005 | 904 | ....do | 34–43. |
| 34 | [7] 274 | Sheeting, 4–4, 4 yards to pound | 3005 | 904 | ....do | 34–43. |
| 35 | 276 | Percale, print, 4.75 yards to pound | 3005 | 904 | ....do | 34–43. |
| 36 | 324 | Yarns, worsted, white | 35701 | 1107 | 40¢ lb. and 45% | 77–82. |
| 37 | [8] 325 | Woolen yarn, 2/40 | 35754 | 1107 | 40¢ lb. and 45% | 75–80. |
| 38 | [8] 326 | Woolen yarn, 2/50 | 35755 | 1107 | 40¢ lb. and 50% | 65–72. |
| 39 | 332 | Cotton rope, awning | 32370 | 923 | Free | Free. |
| 40 | 349 | Coke | 50080 | 1650 | ....do | Do. |
| 41 | 366 | Petroleum, crude | 50510 | 1733 | ....do | Do. |
| 42 | 434 | Pipe, cast-iron, 6-inch | 60910 | 327 | 25% (15%) | 15–25. |
| 43 | 446 | Steel sheets, cold-rolled, annealed | 605462 | 309 | 0.95¢ lb. (0.80¢ lb.) | 31–50. |
| 44 | 447 | Auto body sheets, No. 20 | 60552 | 304 | 30% (20%) | 20–30. |
| 45 | 448 | Sheets, galvanized, steel | 60548 | 309 | 2¢ lb. and 20% | 22–26. |
| 46 | 451 | Steel strips, cold rolled | 60969 | 313 | 2¢ lb. and 25% | 26–29. |
| 47 | 475 | Lead, pipe | 65090 | 392 | 2.375¢ lb. | 34–54. |
| 48 | 477 | Yellow brass rods, ⅝- to 2¾-inch, rod | 64580 | 381 | 4¢ lb. | 11–66. |
| 49 | 478 | Copper rods, round, 1¼- to 3-inch | 64300 | 381 | 2.5¢ lb. and 4¢ lb. | 7–20. |
| 50 | 479 | Brass, 2- to 8-inch sheets | 64580 | 381 | 4¢ lb. | 11–66. |
| 51 | 480 | Copper sheet, hot rolled | 64300 | 381 | 2.5¢ lb. and 4¢ lb. | 7–20. |
| 52 | 483 | Solder | 65061 | 392 | 2.125¢ lb. | 2–7. |
| 53 | 485 | Yellow brass tube, seamless | 64583 | 381 | 8¢ lb. and 4¢ lb. | 32–67. |
| 54 | 486 | Brass wire, round | 64586 | 316a | 25% | 25. |
| 55 | 487 | Copper wire, No. 8 | 64308 | 316a | 25% | 25. |
| 56 | 517 | Lumber, gum, plain sap, 4 by 4 | 41199 | 1803 | Free | Free. |
| 57 | 527 | Lumber, spruce | 41060 | 401 | $1 M bd. ft. (50¢) | 17–26. |
| 58 | 547 | Pigments, red lead, dry | 84217 | 72 | 2.75¢ lb. | 31–71. |
| 59 | 549 | Litharge, powdered | 84215 | 72 | 2.5¢ lb. | (Negligible imports 1931–35). |
| 60 | 614 | Copper sulphate, blue vitreol, 99 percent | 82630 | 1659 | Free | Free. |
| 61 | 633 | Oil, palm, crude | 14260 | 54 | 1¢ lb. | 22–33. |
| 62 | 656 | Ammonia, sulphate | 898110 | 6 | 0.75¢ lb. | 3–11. |
| 63 | 663 | Soda, nitrate, Chili saltpeter | 85060 | 1766 | Free | Free. |
| 64 | 665 | Tankage, ton | 09750 | 1780 | ....do | Do. |
| 65 | 709 | Tubs, galvanized iron | 62099 | 397 | 45% | 45. |
| 66 | 763 | Oil, lubricating | 50750 | 1733 | Free | Free. |
| 67 | 765 | Oil, neutral | 50750 | 1733 | ....do | Do. |

GROUP IX

| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | 19c | Sheep | 00120 | 702 | $3 ea. | 25–55. |
| 2 | 36 | Apples | 13110 | 734 | 25¢ bu. of 50 lb. (15¢) | 85–28 (14–28). |
| 3 | 39 | Hay, alfalfa | 11010 | 779 | $5 ton | 40–72 (50–72). |
| 4 | 40c | Hay | 11010 | 779 | $5 ton ($3) | 41–72 (50–72). |
| 5 | 48 | Seed, clover | 21010 | 763 | 8¢ lb. | 40–108. |
| 6 | 50 | Seed, timothy | 21130 | 763 | 2¢ lb. (1¢) | 10–31. |
| 7 | 54 | Potatoes, sweet | 12119 | 774 | 50% | 50. |
| 8 | 58 | Potatoes, white | 12041 | 771 | 0.75¢ lb. | 43–89 (53–89). |
| 9 | 103c | Flour, wheat | 10720 | 729 | 0.104¢ lb. | 30–196. |
| 10 | 116 | Corn meal, granulated | 10919 | 724 | 0.5¢ lb. | 4–42. |
| 11 | 118 | Rice, clean | 10530 | 727 | 2½¢ lb. | 85–117. |
| 12 | 126 | Apples, evaporated | 13301 | 734 | 2¢ lb. | 7–37. |
| 13 | 127 | Apricots, dried | 13312 | 735 | 2¢ lb. | 17–23. |
| 14 | 129 | Peaches, dried | 13362 | 745 | 2¢ lb. | Negligible. |
| 15 | 130 | Prunes, dried | 13352 | 748 | 2¢ lb. | 13–22. |
| 16 | 131 | Raisins | 13190 | 742 | 2¢ lb. | 18–25 (18–24). |
| 17 | 140 | Beef, cured, 200-pound barrel | 00290 | 706 | 6¢ lb. | 29–76 (29–70). |
| 18 | 146 | Pork, cured | 00310 | 703 | 3.25¢ lb. | 11–16. |
| 19 | 147 | ....do | 00310 | 703 | 3.25¢ lb. | 8–12 (8–11). |
| 20 | 149 | Mess pork, 200-pound barrel | 00310 | 703 | 3.25¢ lb. | 8–12 (8–11). |

[6] Items 65, 66, and 67 appear in appendix 2, table II, combined into No. 65c.
[7] Items 272, 273, and 274 appear in appendix 2, table II, combined into No. 272c.
[8] Items 325 and 326 appear in appendix 2, table II, combined into No. 325c.

TABLE 1.—*Bureau of Labor Statistics wholesale price series, grouped according to frequency of price change, with tariff information on the listed or similar commodities for years 1931–36, inclusive*—Continued

GROUP IX—Continued

| No. | Bureau of Labor Statistics code No. | Commodity with brief description | Tariff information | | | |
|---|---|---|---|---|---|---|
| | | | Code No. | Tariff paragraph | Tariff rate | Equivalent ad valorem range (percent) |
| 21 | 152 | Poultry, dressed | 00259 | 712 | 10¢ lb. (6¢ lb.) | 25–43 (31–43). |
| 22 | 161 | Copra, dried | 22320 | 1727 | Free | Free. |
| 23 | 179 | Sugar, granulated | 16196 | 501 | 2.5¢ lb. (1.875¢) | 47–223. |
| 24 | 183 | Coconut oil, crude | 22425 | 54 | 2¢ lb. | 14–35. |
| 25 | 211 | Cow hides | 02010 | 1530a | 10% | 10. |
| 26 | 214 | Calf skins, 8–15 pounds | 02070 | 1530a | 10% | 10. |
| 27 | 216 | Kips | 02050 | 1530a | 10% | 10. |
| 28 | 217 | Sheep pelts | 02320 | 1765 | Free | Free. |
| 29 | 257 | Duck, No. 8, 36-inch, base price 64 cents | 305 | 904 | Various | 34–43. |
| 30 | 265 | Osnaburg, 30-inch, 7-ounce | 305 | 904 | ...do | 34–43. |
| 31 | 278 | Tire fabrics | 32326 | 904e | 25% | 25. |
| 32 | 279 | Tire fabrics, carded, 10–5 | 32326 | 904e | 25% | 25. |
| 33 | [9] 281 | Cotton yarn, carded | 302's | 901 | Various | 28–33. |
| 34 | [9] 282 | Cotton yarn, 22–1 cones | 302's | 901b | | |
| 35 | [9] 283 | Cotton yarn, single, 40 1 | 301040 | 901a | 17% | 17. |
| 36 | 328 | Hemp, manila | 39012 | 1504a | 15% | 15. |
| 37 | 329 | Jute, raw | 32410 | 1684 | Free | Free. |
| 38 | 339 | Cotton twine | 32370 | 923 | 40% | 40. |
| 39 | 355 | Fuel oil, 24–26 gravity | 50550 | 1733 | Free | Free. |
| 40 | 356 | Fuel oil, 36–40 gravity | 50550 | 1733 | ...do | Do. |
| 41 | 358 | Gasoline, 54–58 gravity | 50610 | 1733 | ...do | Do. |
| 42 | 363 | Kerosene | 50650 | 1733 | ...do | Do. |
| 43 | 445 | Steel, scrap, old material | 60040 | 301 | 75¢ ton | 5–12. |
| 44 | 472 | Copper, ingot, electrolytic | 64170 | 1658 | Free | Free. |
| 45 | 473 | Lead, pig, desilverized | 65050 | 392 | 2 125¢ lb. | 69–168. |
| 46 | 476 | Quicksilver, flask, 1/75 | 66620 | 386 | 25¢ lb. | 21–69. |
| 47 | 488 | Zinc, pig | 65582 | 394 | 1.75¢ lb. | 52–65. |
| 48 | 510 | Lumber, fir | 41040 | 401 | $1 M bd. ft. (50¢) | 17–35. |
| 49 | 511 | Lumber, pine, lath, ⅜-inch | 41070 | 401 | $1 M bd. ft. (50¢) | 17–18. |
| 50 | 515 | Lumber, fir | 41040 | 401 | $1 M bd. ft. (50¢) | 17–35. |
| 51 | 516 | ...do | 41040 | 401 | $1 M bd. ft. (50¢) | 17–35. |
| 52 | 522 | Lumber, pine | 41070 | 401 | $1 M bd. ft. (50¢) | 17–18. |
| 53 | 528 | Lumber, cedar shingles | 41921 | 1760 | Free | Free. |
| 54 | 551 | China wood oil | 22606 | 53 | 20% | 20. |
| 55 | 552 | Linseed oil, raw | 22540 | 53 | 4.5¢ lb. | 77–124. |
| 56 | 555 | Shellac | 21072 | 1707 | Free | Free. |
| 57 | 631 | Tallow | 08155 | 701 | 0.5¢ lb. | 8–16 (11–16). |
| 58 | 634 | Palm oil | 22430 | 1732 | Free | Free. |
| 59 | 639 | Camphor, 100-pound cases | 82580 | 51 | 1¢ lb. | 3–5. |
| 60 | 647 | Menthol | 81270 | 51 | 50¢ lb. | 19–25. |
| 61 | 737 | Cottonseed meal | 11140 | 730 | 0.3¢ lb. | 27–57. |
| 62 | 738 | Linseed meal | 11150 | 730 | 0.3¢ lb. | 22–39 (28–39). |
| 63 | 764 | Cylinder oil | 50750 | 1733 | Free | Free. |
| 64 | 766 | Neutral oil | 50750 | 1733 | ...do | Do. |
| 65 | 784 | Paraffin wax | 50760 | 1733 | ...do | Do. |

GROUP X

| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | 1 | Barley, malting, bushel of 48 pounds | 10200 | 722 | 20¢ bu. | 23–60. |
| 2 | 2c | Corn | 10310 | 724 | 25¢ bu. | 47–57. |
| 3 | 4 | Oats, bushel of 32 pounds | 10410 | 726 | 16¢ bu. | 42–100. |
| 4 | 5 | Rye, bushel of 56 pounds | 10440 | 728 | 15¢ bu. | 10–32. |
| 5 | 6c | Wheat, bushel of 60 pounds | 10665 | 729 | 42¢ bu. | 43–84. |
| 6 | 12 | Calves | 00100 | 701 | 2.5¢ lb. (1.5¢ lb.) | 16–89 (46–89). |
| 7 | 13c | Cows | 00101 | 701 | 3¢ lb. (2¢) | 40–67. |
| 8 | 15c | Steers | 00105 | 701 | 3¢ lb. (2¢ lb.) | 40–67. |
| 9 | 17c | Hogs | 00130 | 703 | 2¢ lb. | 16–28. |
| 10 | 20 | Lambs | 00120 | 702 | $3 ea. | 25–55. |
| 11 | 22c | Poultry, live | 00150 | 711 | 8¢ lb. (4¢ lb.) | 16–29. |
| 12 | 24c | Cotton, middling | 30021 | 783 | 7¢ lb. | 39–75 (44–75). |
| 13 | 27c | Eggs | 00880 | 713 | 10¢ doz. | 54–74. |
| 14 | 30 | ...do | 00880 | 713 | 10¢ doz. | 54–74. |
| 15 | 35 | Apples | 13110 | 734 | 25¢ bu. (15¢ bu.) | 8.5–28 (14–28). |
| 16 | 37 | Lemons | 13030 | 743 | 2.5¢ lb. | 90–113 (90–108). |
| 17 | 38 | Oranges, 126–200 | 13330 | 743 | 1¢ lb. | 21–38. |
| 18 | 42 | Hops | 28100 | 780 | 24¢ lb. | 39–176. |
| 19 | 49 | Flaxseed, bushel of 56 pounds | 22330 | 762 | 65¢ bu. | 56–99 (61–99). |
| 20 | 51 | Tobacco, leaf | 26050 | 601 | 35¢ lb. | 66–115. |
| 21 | 52 | Beans, dried | 11920 | 765 | 3¢ lb. | 98–133. |
| 22 | 53 | Onions | 12080 | 770 | 2.5¢ lb. | 113–188. |
| 23 | 55c | Potatoes, white | 12041 | 771 | 0.75¢ lb. | 43–89 (53–89). |
| 24 | 68c | Butter | 00440 | 709 | 14¢ lb. | 53–89. |
| 25 | 86c | Cheese | 00469 | 710 | 7¢ lb. | 44–52 (47–52). |
| 26 | 98 | Oatmeal | 10922 | 726 | 0.80¢ lb. | 9–17. |
| 27 | 102 | Flour, rye | 10926 | 728 | 0.45¢ lb. | 8–35 (10–35). |
| 28 | 113 | Hominy grits | 10919 | 724 | 0.50¢ lb. | 4–42. |
| 29 | 115 | Corn meal | 10919 | 725 | 0.50¢ lb. | 4–42. |
| 30 | 143 | Lamb, fresh | 00220 | 702 | 7¢ lb. | 39–117. |
| 31 | 144 | Mutton, dressed | 00210 | 702 | 5¢ lb. | 35–102. |
| 32 | 148 | Pork, hams | 00300 | 703 | 3.25¢ lb. | 11–16. |
| 33 | 150 | ...do | 00300 | 703 | 3.25¢ lb. | 11–16. |
| 34 | 151 | Veal, fresh | 00190 | 701 | 6¢ lb. | 61–160. |
| 35 | 153 | Poultry, fresh, 48–54 pounds to dozen | 00254 | 712 | 10¢ lb. (6¢) | 25–43 (31–43). |
| 36 | 157 | Cocoa beans | 15010 | 1653 | Free | Free. |
| 37 | 159 | Coffee | 15110 | 1654 | ...do | Do. |
| 38 | 160 | ...do | 15110 | 1654 | ...do | Do. |
| 39 | 170 | Lard | 00360 | 703 | 3¢ lb. | 12–27 (12–26). |
| 40 | 175 | Pepper, black | 15512 | 781 | 5¢ lb. | 11–25 (11–19). |
| 41 | 180 | Sugar, raw, 96° | 16196 | 501 | 2.5¢ lb (1.875¢) | 47–223. |
| 42 | 181 | Tallow, edible | 08155 | 701 | 0.5¢ lb. | 8–16 (11–16). |
| 43 | 185 | Cottonseed oil | 14231 | 54 | 3¢ lb. | 63–66. |
| 44 | 212c | Hides, steers | 02010 | 1530a | 10% | 10 |

[9] Items 281, 282, and 283 appear in appendix 2, table 11, combined into No. 281c

TABLE I.—*Bureau of Labor Statistics wholesale price series, grouped according to frequency of price change, with tariff information on the listed or similar commodities for years 1931–36, inclusive*—Continued

GROUP X—Continued

| No. | Bureau of Labor Statistics code No. | Commodity with brief description | Tariff information: Code No. | Tariff paragraph | Tariff rate | Equivalent ad valorem range (percent) |
|---|---|---|---|---|---|---|
| 45 | 267 | Print cloths, 7 6 yards to pound, 27-inch | 3305 | 904 | Various | 34–47. |
| 46 | 268 | Print cloths | 3305 | 904 | do | 34–43. |
| 47 | 284c | Cotton yarn | 3027s | 901b | do | 28–33. |
| 48 | 289c | Raw silk | 37020 | 1703 | Free | Free. |
| 49 | 306c | Silk yarn, thrown | 37092 | 1203 | 20% | 20. |
| 50 | 327 | Burlap | 32470 | 1008 | 1¢ lb | 14–15. |
| 51 | 357 | Gasoline | 50610 | 1733 | Free | Free |
| 52 | 359c | do | 50610 | 1733 | do | Do |
| 53 | 170 | Antimony | 66511 | 376 | 2¢ lb | 18–56 |
| 54 | 482 | Silver bar | | 1638 | Free | Free |
| 55 | 484 | Tin, pig | 65510 | 1786 | do | Do |
| 56 | 554 | Rosin, yard basis | 21891 | 80 | 5% | 5. |
| 57 | 556 | Turpentine | 21190 | 80 | 5% | 5 |
| 58 | 736 | Millfeed, bran | 11902 | 730 | 10% | 10 |
| 59 | 739 | Millfeed | 11902 | 730 | 10% | 10. |
| 60 | 751c | Rubber, crude | 20110 | 1697 | Free | Free |

TABLE II.[1]—*Bureau of Labor Statistics wholesale price series, grouped according to depression sensitivity, with tariff information on the listed or similar commodities for years 1931–36 inclusive*

GROUP 1

| No. | Bureau of Labor Statistics[2] Code No. | Commodity with brief description | Tariff information: Code No. | Paragraph | Tariff rate | Equivalent ad valorem range (percent) |
|---|---|---|---|---|---|---|
| 1 | 573 | Plaster | 51930 | 205a | $1.40 ton | 9–18. |
| 2 | 658 | Phosphate rock, 68 percent | 65198 | 1740 | Free | Free. |
| 3 | 651 | Potash, iodine | 83306 | 78 | 25¢ lb | 9–19. |
| 4 | 336 | Cotton thread, 6-cord, white, 100 yards | 30300 | 902 | 20% | 20. |
| 5 | 599 | Arsenic, powdered arsenious oxide | 82010 | 1611 | Free | Free. |
| 6 | 661 | Potash, muriate, 80–85 percent K. C. L. | 85210 | 1745 | do | Do. |
| 7 | 662 | Sulphate of potash, 90–95 percent | 85250 | 1745 | do | Do. |
| 8 | 779 | Cigarettes, per thousand | 26230 | 605 | $4.50 lb. and 25% | 101–121. |
| 9 | 646 | Iodine, resublimed | 83630 | 44 | 10¢ lb | (Negligible imports.) |
| 10 | 760 | Matches, nonsafety | 97700 | 1516 | 20¢ (17.5¢ gross) | 45–109 |
| 11 | 600 | Baking powder, case of 24 1-pound cans | 83430 | 1766 | Free | Free. |
| 12 | 345 | Coal | 50000 | 1650 | do | Do. |
| 13 | 560 | Board, plaster | 44080 | 1803 | do | Do. |
| 14 | 379 | Corn picker | 78918 | 1604 | do | Do. |
| 15 | 644 | Epsom salts, in barrels | 83126 | 49 | 75¢ lb | 115–132. |
| 16 | 598 | Coal-tar products, aniline oil | 80478 | 27a1 | 7¢ lb. and 40% | 42–46 |
| 17 | 565c | Glass, plate, polished | 52201 | 222a | 17¢ (11.3¢ sq. ft.) | 5–78. |
| 18 | 707 | Teacups, saucers, granite | 53710 | 211 | 10¢ doz. and 45% | 64–79. |
| 19 | 761 | Matches, safety | 97700 | 1516 | 20¢ gross (17.5¢) | 45–109. |
| 20 | 706 | Plates, white, granite, 7-inch | 53710 | 211 | 10¢ doz. and 45% | 64–79. |
| 21 | 597 | Ammonia, aqua | 82432 | 7 | 2.5¢ lb. | (No imports.) |
| 22 | 92 | Bread, before baking | 10790 | 1623 | Free | Free. |
| 23 | 629 | Soda sulphide, 30 percent crystals | 83547 | 81 | 0.375¢ lb. | 20–26. |
| 24 | 650 | Phenol, carbolic acid | 80200 | 27b | 3.5¢ lb. and 20% | 33–63. |
| 25 | 343 | Coal | 50000 | 1650 | Free | Free. |
| 26 | 469 | Aluminum, 98–99 percent | 63020 | 374 | 4¢ per lb | 21–25. |
| 27 | 596 | Ammonia, anhydrous | 82432 | 7 | 2.5¢ lb | (No imports.) |
| 28 | 232 | Collars, men's stiff | 31135 | 919 | 37.5% | 37½. |
| 29 | 97 | Corn flakes | 10917 | 732 | 20% (15%) | 15–20 |
| 30 | 602 | Benzine | 80103 | 1651 | Free | Free. |
| 31 | 755 | Batteries, radio, dry "A" | 70921 | 353 | 35% | 35. |
| 32 | 601 | Baking powder, six 10-pound cans in case | 83430 | 1766 | Free | Free. |
| 33 | 375 | Combine thresher, 10-foot, motor driven | 78800 | 1604 | do | Do. |
| 34 | 624 | Salt, sodium chloride | 57241 | 81 | 0.07¢ lb | 56–81 |
| 35 | 344 | Coal | 50000 | 1650 | Free | Free. |
| 36 | 96 | Bread, loaf before baking | 10790 | 1623 | do | Do. |
| 37 | 775 | Soap, laundry | 87199 | 80 | 15% | 15 |
| 38 | 131 | Raisins | 13190 | 742 | 2¢ lb | 18–25 (18–24). |
| 39 | 536 | Barytes, ground | 84021 | 67 | $7.50 ton | 55–78. |
| 40 | 541 | Lampblack | 84202 | 71 | 20% | 20 |
| 41 | 677 | Knives and forks, cocobola handles | 61351 | 355 | 8¢ each and 45% | 69–77. |
| 42 | 653 | Soda phosphate | 83420 | 81 | 1.5¢ (1¢ lb.) | 6–27. |
| 43 | 154 | Ginger ale | 17500 | 808 | 15¢ gal | 13–17 |
| 44 | 746 | Paper, wrapping, manila, jute | 17230 | 1409 | 30% (25%) | 25–30 |
| 45 | 628 | Sodium silicate, 40° | 83539 | 81 | 0.375¢ lb | 9–19 (9–18 |
| 46 | 587 | Acid, nitric, 42° | 82115 | 1601 | Free | Free. |
| 47 | 609 | Coal-tar products, black | 80509 | 28a | 7¢ lb. and 45% | 50–51 |
| 48 | 590 | Coal-tar products, salicylic acid | 80202 | 27a | 7¢ lb. and 40% | 45–46 |
| 49 | 630 | Sulphur, crude | 59331 | 1777 | Free | Free |
| 50 | 607 | Calcium carbide | 82471 | 16 | 1¢ lb | 27–48. |
| 51 | 241 | Shirts, men's dress, broadcloth | 31131 | 919 | 45% | 45. |
| 52 | 474 | Nickel electrolytic cathode, 98–99 percent | 65420 | 389 | 25% | 25. |
| 53 | 611 | Coal-tar products, indigo, 20 percent paste | 80509 | 28a | 7¢ lb. and 45% | 50–51 |
| 54 | 781 | Tobacco, plug, 11-ounce plug | 26209 | 603 | 55¢ lb | 29–67. |
| 55 | 585 | Carbon dioxide, liquid | 82212 | 1 | 1¢ lb. | 1–2. |

[1] The grouping in this table corresponds to that given in appendix 2, table III.
[2] For description of items whose number is followed by "c," see appendix 2, p. 1.

TABLE II.—*Bureau of Labor Statistics wholesale price series, grouped according to depression sensitivity, with tariff information on the listed or similar commodities for years 1931–36 inclusive*—Continued

GROUP 1—Continued

| No. | Bureau of Labor Statistics Code No. | Commodity with brief description | Tariff information | | | |
|---|---|---|---|---|---|---|
| | | | Code No. | Paragraph | Tariff rate | Equivalent ad valorem range (percent) |
| 56 | 399 | Augers, 1 inch | 61572 | 396 | 45% | 45. |
| 57 | 439 | Rails, steel | 60901 | 322 | 0.1¢ lb | 7–11. |
| 58 | 136 | Peas, canned, 2-pound can | 12363 | 769 | 2¢ lb. (1.5¢) | 8–37 (21–37). |
| 59 | 581 | Crushed stone, 1½-inch | 54229 | 214 | 30% | 30. |
| 60 | 610 | Coal-tar products, Brown colors, sulphur | 80508 | 28a | 7¢ lb. and 45% | 50–53 (50–51). |
| 61 | 648 | Opium | 22060 | 59 | $3 lb | 64–142 |

GROUP 2

| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | 418 | Files, metal, 8-inch | 61534 | 362 | 77.5¢ doz. (15¢ doz.) | 11–30. |
| 2 | 402 | Bar iron, refined, per pound | 60213 | 303 | 0.8¢ lb. (0.5¢ lb.) | 16–26. |
| 3 | 544 | Chrome yellow | 84213 | 70 | 25% | 25. |
| 4 | 592 | Acid, Sulphuric, 66 degrees | 82060 | 1601 | Free | Free. |
| 5 | 586 | Acid, muriatic, 20 degrees | 82112 | 1601 | do | Do. |
| 6 | 398 | Angle bars, steel | 60810 | 312 | 0.2¢ lb | 15–27. |
| 7 | 409 | Boiler tubes, cold drawn steel | 60928 | 328 | 25% | 25. |
| 8 | 660 | Manure salts, 20 percent | 85240 | 1685 | Free | Free. |
| 9 | 626 | Sodium bicarbonate | 83430 | 1756 | do | Do. |
| 10 | 156 | Sodas | 17760 | 808 | 15¢ gal | 13–17. |
| 11 | 176 | Salt, 280-pound barrels | 57240 | 81 | 11¢ lb | 15–28. |
| 12 | 417 | Chisels, 1-inch | 61572 | 396 | 45% | 45. |
| 13 | 542 | Paint, prussian blue | 84210 | 68 | 8¢ lb | 34–44. |
| 14 | 415 | Sanitary cans, tin | 62095 | 339 | 40% | 40. |
| 15 | 436 | Pipe, steel, galvanized | 60928 | 328 | 25% | 25. |
| 16 | 759 | Cigar boxes, veneer | 42090 | 405 | 20% | 20. |
| 17 | 622 | Soda, carbonate, sal | 83523 | 81 | 0.25¢ lb | 5–8. |
| 18 | 507 | Cement, roofing tile, 9 by 15 | 53805 | 202 | 60% | 60. |
| 19 | 531 | Paint, inside flat, house | 84319 | 66 | 25% | 25. |
| 20 | 191 | Shoes, children's | 03539 | 1530e | 20% | 20. |
| 21 | 456 | Vises | 61575 | 396 | 45% | 45. |
| 22 | 443 | Saws, cross-cut, 6-foot | 61518 | 340 | 20% (15%) | 15–20. |
| 23 | 744 | Paper, newsprint, rolls | 47110 | 1772 | Free | Free. |
| 24 | 654 | Alkaloids, strychnine | 81120 | 86 | 20¢ per oz | No information 1931–35. |
| 25 | 425c | Iron ore | 60010 | 1700 | Free | Free. |
| 26 | 53 | Onions | 12080 | 770 | 2.5¢ lb | 113–188. |
| 27 | 627 | Soda caustic, 76 percent | 83533 | 81 | 0.5¢ lb | 3–4. |
| 28 | 557 | Whiting, imported chalk | 84025 | 20 | 0.4¢ lb. (0.2¢ lb) | 72–171. |
| 29 | 537 | Acetate, butyl | 838421 | 37 | 7¢ lb | (No imports 1931–35.) |
| 30 | 608 | Calcium, chloride, 73–75 percent | 83710 | 1641 | Free | Free. |
| 31 | 293 | Underwear, men's, 60 percent wool, 40 percent cotton | 36371 | 1114c | 50¢ lb. and 50% (30%) | 45–65. |
| 32 | 435 | Pipe, steel, ¾-inch | 60928 | 328 | 25% | 25. |
| 33 | 330 | Artificial leather, 17½-ounce, 1 32 | 32370 | 923 | 40% | 40. |
| 34 | 716 | Vacuum cleaner, without attachments | 70690 | 353 | 35% | 35. |
| 35 | 620 | Potash, caustic, 88–92 percent | 83250 | 78 | 1¢ lb | 14–19. |
| 36 | 676 | Carvers, stag handles, 9-inch | 61308 | 355 | 8¢ each and 45% | 69–77. |
| 37 | 772 | Shipping cases, rough, pine | 42069 | 407 | 15% | 15. |
| 38 | 370 | Engine, 3-horsepower, agricultural implement | 78919 | 1604 | Free | Free. |
| 39 | 655 | Zinc chloride, granular | 838933 | 93 | 1.3¢ lb | 35–45. |
| 40 | 497 | Concrete blocks, plain, 8 by 8 by 16 inches | 54245 | 214 | 30% | 30. |
| 41 | 625 | Soda ash, 58 percent | 83523 | 81 | 0.25¢ lb | 5–8. |
| 42 | 659 | Kainit, 12.4 percent | 85230 | 1745 | Free | Free. |
| 43 | 561 | Board, building wall | 41090 | 1803 | do | Do. |
| 44 | 101 | Cookies, sugar | 10751 | 733 | 30% | 30. |
| 45 | 128 | Currants, dried, 50-pound box | 13210 | 742 | 2¢ lb | 32–39. |
| 46 | 623 | Salt cake, ground | 83350 | 1766 | Free | Free. |
| 47 | 380 | Corn planter, 30-inch open wheels, 80 rods | 78915 | 1604 | do | Do. |
| 48 | 687 | Ironers, electric, automatic, 30-inch roll | 70999 | 353 | 35% | 35. |
| 49 | 649 | Peroxide of hydrogen, 4-ounce bottle | 838622 | 5 | 25% | 25. |
| 50 | 444 | Saws, 26-inch, skewback | 61518 | 340 | 20% (15%) | 15–20. |
| 51 | 226 | Gloves, men's mocha, unlined | 04120 | 1532 | 50% (min.) | 62–73. |
| 52 | 494 | Sinks | 62099 | 397 | 45% | 45. |
| 53 | 550 | Lithopone | 84100 | 77 | 1.75¢ lb. (1.5¢ lb.) | 48–65. |
| 54 | 556 | Turpentine | 21190 | 90 | 5% | 5. |
| 55 | 331 | Artificial leather, 7-ounce, 3 60 | 32370 | 923 | 40% | 40. |
| 56 | 393 | Grain thresher, steel, 22 by 38 complete | 78904 | 1604 | Free | Free. |
| 57 | 538 | Bone black, powdered | 09913 | 69 | 20% | 20. |
| 58 | 777 | Soap, toilet, 3 to 3½ ounces | 87122 | 80 | 30% | 30. |
| 59 | 225 | Leather belting, 1-inch | 06999 | 1531 | 35% | 35. |
| 60 | 177 | Soup, canned, tomato, 1-pound, 1-ounce | 12531 | 775 | 35% | 35. |

GROUP 3

| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | 367 | Grain binder, 6-foot, with bundle carrier | 78919 | 1604 | Free | Free |
| 2 | 570 | Lime, building | 51712 | 203 | 10¢ per 100 lbs. (7¢) | 14–22 (16–22). |
| 3 | 391 | Spade, garden | 61581 | 373 | 30% | 30. |
| 4 | 593 | Alcohol, denatured, 188 proof | 82310 | 4 | 15¢ gal | 7–113 |
| 5 | 530 | Enamel, paint | 84318 | 66 | 25% | 25. |
| 6 | 381 | Plow tractor, 14 inches | 78910 | 1604 | Free | Free. |
| 7 | 619 | Oil, pine, distilled | 22943 | 58 | 25% | 25. |
| 8 | 613 | Copperas | 83717 | 1675 | Free | Free. |
| 9 | 376 | Hoe, garden, 7-inch | 61589 | 373 | 30% (15%) | 15–30. |
| 10 | 137 | Spinach, canned | 12499 | 775 | 35% | 35. |
| 11 | 545 | Ethyl acetate, anhydrous | 838430 | 37 | 3¢ lb | (Negligible.) |
| 12 | 543 | Chrome green, light | 84213 | 70 | 20% | 20. |
| 13 | 171 | Molasses, per gallon, average sugar content | 16352 | 502 | $1.35 per 100 gal | 20–28.4. |
| 14 | 595 | Aluminum sulphate | 838140 | 6 | 0.2¢ lb | 2–11. |
| 15 | 132 | Bananas | 13010 | 1618 | Free | Free. |
| 16 | 663 | Soda, nitrate, Chili saltpeter | 85060 | 1766 | do | Do. |
| 17 | 558 | Zinc, oxide | 84110 | 77 | 1.75¢ lb | 28–40. |
| 18 | 548 | Lead, carbonate, white, in oil | 84219 | 72 | 2.5¢ lb. (2.1¢ lb.) | 21–34. |
| 19 | 385 | Rake, 14 teeth, steel | 61589 | 373 | 30% (15%) | 15–30. |

TABLE II.—*Bureau of Labor Statistics wholesale price series, grouped according to depression sensitivity, with tariff information on the listed or similar commodities for years 1931–36 inclusive*—Continued

GROUP 3—Continued

| No. | Bureau of Labor Statistics Code No. | Commodity with brief description | Tariff information | | | |
|---|---|---|---|---|---|---|
| | | | Code No. | Paragraph | Tariff rate | Equivalent ad valorem range (percent) |
| 20 | 421 | Cork knives, 15 pounds to dozen | 61585 | 373 | 30% (120%) | 20–30. |
| 21 | 227 | Gloves, unlined, short cuff | 04120 | 1552a | 50% | 50. |
| 22 | 698 | Ranges, electric | 70926 | 353 | 35% (25%) | 25–35. |
| 23 | 681 | Linoleum, felt base, 2 yards wide | 39810 | 1020 | 35% | 35. |
| 24 | 635 | Citric acid, crystals | 82216 | 1 | 17¢ lb | 56–137 (79–137). |
| 25 | 388 | Cream separator, valued over $50 | 77200 | 372 | 25% (12½%) | 12½–25. |
| 26 | 390 | Shovels, cast steel, black, long handle | 61581 | 373 | 30% | 30. |
| 27 | 337 | Shoe thread, linen, per pound, 10's | 32723 | 1001b | 40% | 40. |
| 28 | 686 | Heating appliances, electric irons | 70907 | 339 | 40% | 40. |
| 29 | 638 | Alkaloids, caffeine | 81110 | 15 | $1.25 lb. (90¢ lb.) | 200 (negligible). |
| 30 | 704 | Nappies, common, 4-inch | 52762 | 218f | 60% | 60. |
| 31 | 386 | Rake, self-dump, 10 feet, 26 teeth | 78802 | 1601 | Free | Free. |
| 32 | 95 | Bread, loaf before baking | 10790 | 1623 | do | Do. |
| 33 | 758 | Caskets, wood | 12809 | 412 | 33.3% | 33⅓. |
| 34 | 769 | Rubber heels | 20084 | 1537b | 25% | 25. |
| 35 | 99 | Wheat cereal | 10917 | 732 | 20% (15%) | 15–20. |
| 36 | 228 | Harness, set | 06993 | 1530f | 15% | 15. |
| 37 | 377 | Hay loader, 6-foot windrow, with carriage | 78919 | 1604 | Free | Free. |
| 38 | 158 | Cocoon, ½-pound cans | 15021 | 777a | 3¢ lb. (1.5¢ lb.) | 12–27. |
| 39 | 371 | Forks, hay, 3 tines | 61589 | 373 | 30% (15%) | 15–30. |
| 40 | 392 | Manure spreader | 78919 | 1604 | Free | Free. |
| 41 | 423 | Locks, 3½-inch sets | 62080 | 384 | $2 doz. and 20% | 45–55. |
| 42 | 510 | Iron oxide, black | 81001 | 73 | 10% | 10. |
| 43 | 534 | Roof and barn paint, red | 84319 | 66 | 25% | 25. |
| 44 | 535 | Varnish | 84113 | 75 | 25% | 25. |
| 45 | 169 | Jelly, grape, 8½, 6 to case | 13295 | 751 | 35% | 35. |
| 46 | 43 | Milk, 3.5 percent | 00380 | 707 | 6.5¢ gal | 22–43. |
| 47 | 533 | Paint, porch and deck | 84319 | 66 | 25% | 25. |
| 48 | 584 | Acid, boric | 82210 | 1 | 1¢ lb | 12–22. |
| 49 | 369 | Grain drill, 12 by 7, plain single disk | 78915 | 1604 | Free | Free. |
| 50 | 571 | Lime, hydrated | 51710 | 203 | .12 (0.68 per lb.) | 17–25. |
| 51 | 372 | Harrow, disk, 14 by 16 with scrapers | 78900 | 1604 | Free | Free. |
| 52 | 368 | Cultivator, riding, 8 shovels, pin break | 78600 | 1604 | do. | Do. |
| 53 | 604 | Borax, crystals, granulated | 83518 | 81 | 0.125¢ lb | 1 |
| 54 | 346 | Coal | 50000 | 1650 | Free | Free. |
| 55 | 206c | Shoes, women's | 03529 | 1530e | 20% | 20. |
| 56 | 603 | Bleaching powder | 83100 | 14 | 0.3¢ lb | 9–11. |
| 57 | 632 | Coal-tar products, toluene | 80115 | 1651 | Free | Free. |
| 58 | 756 | Storage battery, 13-plate | 70920 | 320 | 40% | 40. |
| 59 | 508 | Wall tile, glazed | 53813 | 202a | 50% | 50. |
| 60 | 569 | Gravel, ton | 53958 | 1775 | Free | Free. |
| 61 | 117 | Pretzels, butter | 10751 | 733 | 30% | 30. |
| 62 | 89 | Milk, condensed, sweet, 48 14-ounce | 00401 | 708a | 2.75¢ lb | 42–63. |

GROUP 4

| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | 378 | Mower, 5-foot, regular lift | 78903 | 1604 | Free | Free. |
| 2 | 693 | Electric sewing machines | 70999 | 353 | 35% | 35. |
| 3 | 397 | Windmill, steel, 8-foot diameter, aermotor | 78919 | 1604 | Free | Free. |
| 4 | 396 | Wagon, 2-horse, agriculture | 78908 | 1604 | do | Do. |
| 5 | 574c | Roofing | 55200 | 1501c | 0.75¢ per lb. (0.6¢) | 55–61. |
| 6 | 492 | Lavatories, each | 61415 | 339 | 5¢ lb. and 30% (and 15%) | 36–59. |
| 7 | 757 | Caskets, metal | 67999 | 397 | 45% | 45. |
| 8 | 711 | Washing machine, electric enamel | 70999 | 353 | 35% | 35. |
| 9 | 383 | Plows, walking, 2-horse | 78600 | 1604 | Free | Free. |
| 10 | 133 | Asparagus, canned, 2½'s | 12390 | 775 | 35% | 35. |
| 11 | 579 | Sand, building | 53957 | 1775 | Free | Free. |
| 12 | 348 | Coal | 50000 | 1650 | do. | Do. |
| 13 | 577 | Roofing, prepared shingles | 55200 | 1501c | 0.75¢ lb. (0.6¢) | 55–61. |
| 14 | 572 | Pipe, sewer, 8-inch, c. l. foot (iron) | 60910 | 327 | 25% (15%) | 15–25. |
| 15 | 387 | Rake, side delivery | 78902 | 1604 | Free | Free. |
| 16 | 441 | Rivets, small, 7/16 inch | 62054 | 332 | 1¢ lb | 8–35. |
| 17 | 416 | Iron castings, malleable | 61138 | 327 | 20% | 20. |
| 18 | 583 | Acetic acid, 28 percent | 82000 | 1 | 1.375¢ lb | 3–12. |
| 19 | 394 | Tractor, 10–20 horsepower | 78700 | 1601 | Free | Free. |
| 20 | 694 | Sewing machines, treadle | 75510 | 372 | 15% | 15. |
| 21 | 165 | Fish, herring, canned | 00712 | 719(4) | 25% | 25. |
| 22 | 690 | Wall oilcloth, plain tints | 39714 | 907 | 40% (30%) | 30–40. |
| 23 | 450 | Spikes, 1½ inch and more | 61120 | 331 | 0.1¢ lb | 11–17. |
| 24 | 502 | Brick, sandlime, per thousand | 53906 | 201b | $1.25 per M | 4–11. |
| 25 | 455 | Tin plate, 14 by 20 inches, base 100 pounds | 60601 | 310 | 1¢ per lb | 9–31. |
| 26 | 642 | Chloroform | 838310 | 18 | 1¢ per lb. | 1–2. |
| 27 | 606 | Calcium arsenate | 83709 | 1612 | Free | Free. |
| 28 | 666c | Fertilizer | 85593 | 1685 | do. | Do. |
| 29 | 453 | Terneplate, 20 by 28 inches, base 300 pounds | 60603 | 310 | 1¢ per lb. | 9–31. |
| 30 | 500 | Brick, front, light-colored | 53907 | 201b | 5% | 5. |
| 31 | 413 | Track bolts | 62050 | 330 | 1¢ lb. | 25–35. |
| 32 | 640 | Castor oil | 22602 | 53 | 3¢ lb. | 33–68 (40–68). |
| 33 | 681 | Linoleum | 39810 | 1020 | 35% | 35. |
| 34 | 193 | Shoes, youths' | 03519 | 1530e | 20% | 20. |
| 35 | 395 | Farm tractor, 15–30 horsepower | 78700 | 1601 | Free | Free. |
| 36 | 563 | Door frames | 42899 | 412 | 33.3% | 33⅓. |
| 37 | 564 | Window frames | 42899 | 412 | 33.3% | 33⅓. |
| 38 | 616 | Formaldehyde | 838610 | 10 | 8¢ lb. | 31–32 (negligible). |
| 39 | 490 | Range boiler, galvanized, sheet steel | 62099 | 397 | 45% | 45. |
| 40 | 481 | Zinc, sheet | 65500 | 391 | 2¢ lb. | 27–48. |
| 41 | 119 | Rice, clean | 10530 | 727 | 2.5¢ lb. | 85–117. |
| 42 | 362 | Kerosene | 50650 | 1733 | Free | Free. |
| 43 | 442 | Wire rods | 60360 | 315 | 0.3¢ lb. (.25¢ lb.) | 20–23. |
| 44 | 559 | Asphalt, bulk | 53940 | 1710 | Free | Free. |
| 45 | 139 | Tomatoes, canned, No. 3 | 12380 | 772 | 50% | 50. |
| 46 | 495 | Bath tubs | 62099 | 397 | 45% | 45. |
| 47 | 400 | Axes, single bit, 3½–4½ pounds | 61560 | 396 | 45% | 45. |
| 48 | 460 | Fencing, woven wire | 61052 | 317 | 0.5¢ per lb. | 20–30. |
| 49 | 612 | Coal-tar products, jet | 80508 | * 28a | 7¢ lb. and 45% | 50–53 (50–51). |
| 50 | 457c | Wire | 67980 | 316i | 25% | 25. |

TABLE II.—*Bureau of Labor Statistics wholesale price series, grouped according to depression sensitivity, with tariff information on the listed or similar commodities for years 1931–36 inclusive*—Continued

GROUP 4—Continued

| No. | Bureau of Labor Statistics No. | Commodity with brief description | Tariff information | | | |
|---|---|---|---|---|---|---|
| | | | Code No. | Paragraph | Tariff rate | Equivalent ad valorem range (percent) |
| 51 | 594 | Menthanol, wood alcohol, 95 percent | 82316 | 4 | 18¢ gal. | 5–57 (5–30 negligible). |
| 52 | 643 | Cream of tartar, powdered | 83230 | 9 | 5¢ lb. | 12–51 (12–50). |
| 53 | 374 | Harrow, 17-tooth | 78900 | 1604 | Free | Free. |
| 54 | 373 | Harrow, peg-tooth | 78900 | 1604 | ....do | Do. |
| 55 | 652 | Quinine, sulphate, 100-ounce tins | 81020 | 1748 | ....do | Do. |
| 56 | 685 | Heating appliances, electric irons | 70907 | 339 | 40% | 40. |
| 57 | 664 | Super-phosphate, 16 percent basis | 85193 | 1740 | Free | Free. |
| 58 | 521 | Lumber, pine, white | 41070 | 401 | $1 M bd. ft. (50¢) | 17–18. |
| 59 | 454 | Steel, tie plate | 60905 | 322 | 0.25¢ lb. | 9–24. |
| 60 | 509 | Cement, portland, barrel | 51810 | 205b | 0.06¢ (0.045¢ lb.) | 18–30. |
| 61 | 532 | Paint, house | 84319 | 66 | 25% | 25. |

GROUP 5

| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | 155 | Grape juice, case of 2 dozen pints | 17740 | 806a | 70¢ gal. | 42–116. |
| 2 | 315 | Flannel, wool 6½ ounces, 54 inches | 36050 | 1109a | 50¢ lb. and 50% | 105–113. |
| 3 | 667c | Fertilizer | 85000 | 1685 | Free | Free. |
| 4 | 347 | Coal | 50000 | 1650 | ....do | Do. |
| 5 | 179 | Sugar, granulated | 16196 | 501 | 2.5¢ lb. (1.875¢) | 47–223. |
| 6 | 389 | Corn sheller, power, two-hole | 78915 | 1604 | Free | Free. |
| 7 | 763 | Oil, lubricating | 50750 | 1733 | ....do | Do. |
| 8 | 705 | Pitchers, ½-gallon, glass | 52762 | 218f | 60% | 60. |
| 9 | 578 | Slate, roofing, 10- by 20-inch | 51114 | 235 | 25% | 25. |
| 10 | 37 | Lemons | 13030 | 743 | 2.5¢ lb. | 90–113 (90–108). |
| 11 | 289 | Hosiery, silk, 240-needle | 37370 | 1208 | 60% | 60. |
| 12 | 414 | Butts, wrought steel, plated | 62070 | 397 | 45% | 45. |
| 13 | 501 | Paving blocks, 3½-inch | 53906 | 201b | $1.25 per M. | 4–12 (4–10). |
| 14 | 180 | Sugar, raw, 96° | 16196 | 501 | 2.5¢ lb. (1.875¢) | 47–223. |
| 15 | 294 | Underwear, 33 percent worsted, 16 pounds to dozen | 36371 | 1114c | 50¢ lb. and 50% (30%) | 45–65. |
| 16 | 201c | Shoes | 03509 | 1530e | 20% | 20. |
| 17 | 305 | Spun silk, 200/2 gray | 37053 | 1202 | 40% | 40. |
| 18 | 770 | Garden hose, ⅝-inch, 2-braid, foot | 20672 | 1537b | 25% | 25. |
| 19 | 275 | Madras, woven, 4.6 yards, pound (bleached) | 305's | 904 | Various | 34–43. |
| 20 | 782 | Tobacco, smoking, gross of 1-ounce bags | 26299 | 603 | 55¢ lb. | 29–67. |
| 21 | 433 | Pig iron | 60030 | 301 | $1.12½ ton | 7–12. |
| 22 | 420 | Hatchet | 61569 | 396 | 45% | 45. |
| 23 | 615 | Creosote oil | 80000 | 1651 | Free | Free. |
| 24 | 194c | Shoes, men's | 03509 | 1530e | 20% | 20. |
| 25 | 364 | Petroleum, crude, barrels | 50510 | 1733 | Free | Free. |
| 26 | 45 | Milk, 3.6 percent butterfat | 00380 | 707 | 6.5¢ gal. | 22–43. |
| 27 | 754 | Barrel, red oak, unlined | 42067 | 407 | 15% | 15. |
| 28 | 303c | Silk, spun | 37050 | 1202 | 40% | 40. |
| 29 | 605 | Calcium lime, acetate | 82470 | 16 | 1¢ lb. | 40–44. |
| 30 | 208 | Shoes, women's | 03529 | 1530e | 20% | 20. |
| 31 | 314 | Dress goods, cotton warp | 36032 | 1109 | 50¢ lb. and 55% | 77–85 (77–81). |
| 32 | 695 | Window shades, 6 feet by 36 inches, water color | 39715 | 907 | 30% | 30. |
| 33 | 189 | Vinegar, cider | 12540 | 738 | 8¢ pf. gal. | 27–39 |
| 34 | 518 | Lumber, hemlock | 41050 | 401 | $1 M bd. ft. (50¢) | 20–46. |
| 35 | 120 | Apples, canned, 10's | 13302 | 734 | 2.5¢ lb. | 13–70. |
| 36 | 384 | Pumps, agriculture, pitcher spout | 78919 | 1604 | Free | Free. |
| 37 | 496 | Laundry tubs, cement composition, 48 by 24 inches | 54227 | 214 | 30% | 30. |
| 38 | 636 | Acid, tartaric, crystals | 82070 | 1 | 8¢ lb. | 36–57 (36–48). |
| 39 | 449 | Steel skelp, grooved | 60390 | 307 | 0.5¢ lb. (0.35¢ lb.) | 28–53 |
| 40 | 334 | Rope, sisal, ¾ inch diameter | 34170 | 1005a | 2¢ (1¢ lb.) | 16–24 |
| 41 | 363 | Kerosene | 50650 | 1733 | Free | Free. |
| 42 | 778 | Starch, laundry | 28159 | 83 | 1.5¢ lb. | 20–49. |
| 43 | 767 | Plate glass mirror, 12 by 24 inches, beveled | 52300 | 223 | 45% | 45. |
| 44 | 333 | Rope, manila, 1 pound, ¾ inch diameter | 34175 | 1005b | 40% (20%) | 20–40. |
| 45 | 382 | Plows, walking, 1-horse | 78600 | 1604 | Free | Free. |
| 46 | 702c | Dinner sets | 53502 | 212 | 10¢ doz. and 70% | 84–93. |
| 47 | 749 | Wood pulp, unbleached | 46000 | 1716 | Free | Free. |
| 48 | 264 | Nainsook, muslin, cotton | 3050's | 904b | 60¢ lb. | 34–43. |
| 49 | 220 | Harness leather | 03030 | 1530b(3) | 12½% (10%) | 10–12½. |
| 50 | 190c | Shoes | 03519 | 1530e | 20% | 20. |
| 51 | 341c | Carpet yarn, jute, 14–16 | 32441 | 1003 | 4¢ lb. | 59.6–63. |
| 52 | 410 | Machine bolts | 62050 | 330 | 1¢ per lb. | 25–35. |
| 53 | 295c | Rayon | 38340 | 1306 | 45¢ lb. and 60% (45%) | 75–102 (75–82). |
| 54 | 35 | Apples | 13110 | 734 | 25¢ bu. (15¢ bu.) | 8.5–28 (14–28). |
| 55 | 448 | Sheets, galvanized, steel | 60548 | 309 | 2¢ lb. and 20% | 22–26. |
| 56 | 512 | Siding, ¾ inch by 8 inches, red cedar | 41199 | 1803(1) | Free | Free. |
| 57 | 679 | Carpets, brussels, 5-frame, wool | 36712 | 1117a | 60% | 60. |
| 58 | 765 | Oil, neutral | 50750 | 1733 | Free | Free. |
| 59 | 100 | Crackers, plain soda | 10751 | 733 | 30% | 30. |
| 60 | 567c | Glass, window | 520's | 219 | Various per lb. | 37–50. |
| 61 | 205c | Shoes, women's | 03529 | 1530e | 20% | 20. |
| 62 | 682 | Linoleum, rug, felt base, 9 by 12 | 39810 | 1020 | 35% | 35. |
| 63 | 186 | Olive oil, edible | 14240 | 53 | 8¢ lb. | 59–82 (60–82). |

GROUP 6

| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | 771 | Rubbers, men's | 20311 | 1537b | 25% | 25. |
| 2 | 768 | Rubber heels | 20984 | 1537b | 25% | 25. |
| 3 | 683 | Linoleum, inlaid | 39800 | 1020 | 42% | 42. |
| 4 | 121 | Apricots, canned | 13315 | 735 | 35% | 35. |
| 5 | 419 | Hammer, 1-pound | 61575 | 396 | 45% | 45. |
| 6 | 689 | Oil cloths, table | 39714 | 907 | 30% | 30. |
| 7 | 350c | Coke | 50080 | 1650 | Free | Free. |
| 8 | 124 | Pears, canned | 13369 | 749 | 35% | 35. |
| 9 | 229 | Suitcase | 06920 | 1531 | 35% | 35. |
| 10 | 422 | Door knobs, metal | 62099 | 397 | 45% | 45. |
| 11 | 750 | Soda, bleached, wood pulp | 46000 | 1716 | Free | Free |

TABLE 11.— *Bureau of Labor Statistics wholesale price series, grouped according to depression sensitivity, with tariff information on the listed or similar commodities for years 1931–36 inclusive*—Continued

GROUP 6—Continued

| No. | Bureau of Labor Statistics No. | Commodity with brief description | Tariff information | | | |
|---|---|---|---|---|---|---|
| | | | Code No. | Paragraph | Tariff rate | Equivalent ad valorem range (percent |
| 12 | 169 | Fire brick | 53005 | 201a | 25% (15%) | 15–25. |
| 13 | 520 | Lumber, oak | 41199 | 1803 | Free | Free. |
| 14 | 546 | Copal, manila | 21099 | 1686 | do | Do. |
| 15 | 447 | Auto body sheets, No. 20 | 60552 | 304 | 30% (20%) | 20–30. |
| 16 | 680 | Carpets, Wilton | 36714 | 1117a | 60% | 60. |
| 17 | 503 | Silica brick | 53006 | 201b | $1.25 per M | 1–11. |
| 18 | 688 | Oil cloths, 12-inch | 39714 | 907 | 30% | 30. |
| 19 | 231 | Collars, men's soft | 31135 | 919 | 37.5% | 37½. |
| 20 | 230 | Traveling bags | 09020 | 1531 | 35% | 35. |
| 21 | 197 | Shoes, men's calf | 03509 | 1530e | 20% | 20. |
| 22 | 123 | Peaches, canned | 13365 | 745 | 35% | 35. |
| 23 | 618 | Coal-tar products, naphthalene, flake, pound | 80108 | 1651 | Free | Free. |
| 24 | 359e | Gasoline | 50610 | 1733 | do | Do. |
| 25 | 247 | Topcoats, 18-ounce | 36401 | 1115a | 50¢ lb. and 50% | 56–58. |
| 26 | 452 | Steel, structural shapes | 60810 | 312 | 0.2¢ lb | 15–27. |
| 27 | 202c | Shoes, men's | 03509 | 1530e | 20% | 20. |
| 28 | 424 | Nails, wire | 61121 | 331 | 15% | 15. |
| 29 | 38 | Oranges, 126–200 | 13330 | 743 | 1¢ lb | 21–38. |
| 30 | 163 | Fish, salmon, canned | 00671 | 718b | 25% | 25. |
| 31 | 157 | Cocoa beans | 15010 | 1653 | Free | Free. |
| 32 | 713 | Book paper, per 100 pounds | 47120 | 1410 | 0.25¢ lb. and 10% | 18–22. |
| 33 | 407 | Steel barrels, weight 43 pounds, 35 gallons | 62099 | 397 | 45% | 35. |
| 34 | 240 | Overcoat, 30-ounce 3 button, yoke lined, heavy | 36401 | 1115a | 50¢ lb. and 50% | 56–68. |
| 35 | 122 | Cherries, canned 2½'s, 24 to case | 13170 | 737 | 9.5¢ lb. and 40% (20%) | 72–113 (95–113). |
| 36 | 162 | Salmon, pink, No. 1, 48 to case | 00671 | 718b | 25% | 25. |
| 37 | 412 | Stove bolts | 62050 | 330 | 1¢ lb | 25–35. |
| 38 | 438 | Steel plates, 1 1-inch | 60551 | 304 | 0.5¢ lb. (4/10¢ | 16–34. |
| 39 | 416 | Steel sheets, cold-rolled, annealed | 605462 | 309 | 0.95¢ lb. (0.80¢ lb.) | 31–50. |
| 40 | 408 | Steel billets | 60121 | 304 | 0.5¢ lb. (0.4¢ lb.) | 20–25. |
| 41 | 437 | Planes, jackplane | 61572 | 396 | 45% | 45. |
| 42 | 90 | Milk, evaporated, 48 16-ounce in case | 00400 | 708a | 1.8¢ lb. | 17–18. |
| 43 | 411 | Plow bolts, 2 inches by ¾ inch | 62050 | 330 | 1¢ lb | 25–35. |
| 44 | 311 | Dress goods, women's wool | 36032 | 1109 | 50¢ lb. and 55% | 77–85 (77–81). |
| 45 | 647 | Menthol | 81270 | 51 | 50¢ lb | 19–25. |
| 46 | 401 | Bar iron | 60213 | 303 | 0.8¢ (1.2¢ lb.) | 16–26. |
| 47 | 514 | Cypress, 4 by 4 inches, 1,000 feet | 41199 | 1803(1) | Free | Free. |
| 48 | 125 | Pineapples, canned, 2½'s | 13091 | 747 | 2¢ lb. | 40–72. |
| 49 | 269 | Filling sateen, 36 inches, 4.37 yards to pound | 3090000 | 901c | 47½% | 47½. |
| 50 | 160 | Coffee | 15110 | 1654 | Free | Free. |
| 51 | 764 | Cylinder oil | 50750 | 1733 | do | Do. |
| 52 | 153 | Poultry, fresh, 48–54 pounds to dozen | 00254 | 712 | 10¢ lb. (6¢ | 25–43 (31–43). |
| 53 | 252 | Table damask, cotton, 1.92 yards per pound | 30823 | 910 | 30% | 30. |
| 54 | 159 | Coffee | 15110 | 1654 | Free | Free. |
| 55 | 178 | Corn starch, 48 1-pound packages | 28150 | 83 | 1.5¢ per lb | 2–77. |
| 56 | 708 | Tumblers, 8–10 ounces | 52762 | 218f | 60% | 60. |
| 57 | 553 | Putty, 1–5 pound tins | 84026 | 20 | 0.75¢ lb. (0.5¢ lb.) | 30–73. |
| 58 | 134 | Beans, canned, 18 ounces | 12392 | 765 | 3¢ lb. | 30–65 (46–65). |
| 59 | 291 | Underwear, cotton, 12–12½ pounds | 31121 | 917 | 45% (30%) | 30–45. |
| 60 | 639 | Camphor, 100-pound cases | 82580 | 51 | 1¢ lb. | 3–5. |
| 61 | 152 | Poultry, dressed | 00259 | 712 | 10¢ lb. (6¢ lb.) | 25–43 (31–43). |
| 62 | 692 | Pillow cases, 64 by 64 | 30860 | 911b | 2 % | 25. |

GROUP 7

| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | 405 | Steel, sheet bars | 60080 | 304 | 0.3¢ lb. (0.25¢ lb.) | 20–41. |
| 2 | 280 | Toweling, cotton, 4-ounce (bleached) | 3057's | 901 | Various | 34–43. |
| 3 | 167 | Fish, salmon, smoked | 00750 | 720a | 25% | 25. |
| 4 | 164 | Fish, cod, canned (salmon) | 00675 | 718b | 25% | 25. |
| 5 | 288 | Hosiery, rayon, 39-gage | 38401 | 1309 | 45¢ lb. and 65% | 75–117. |
| 6 | 562 | Doors, pine | 42899 | 412 | 33⅓% | 33⅓. |
| 7 | 617 | Logwood extract, solid | 23315 | 38 | 15% | 15. |
| 8 | 678 | Carpets, Axminster, ¾ yard wool | 36711 | 1117a | 60% | 60. |
| 9 | 30 | Eggs | 00880 | 713 | 10¢ doz. | 54–74. |
| 10 | 309 | Dress goods, women's 9½-ounce, wool | 36051 | 1109a | 50¢ lb. and 55% | 86–87. |
| 11 | 22c | Poultry, live | 00150 | 711 | 8¢ lb. (4¢ lb.) | 16–29. |
| 12 | 338 | Twine, binder, sisal, 50-pound bale | 34171 | 1005a | 2¢ and 15% (1¢ lb. and 7½%) | 37.6–40. |
| 13 | 429 | Pig iron, ferromanganese, 80% | 60031 | 301 | $1.125 ton | 3–4. |
| 14 | 526 | California redwood, 4 by 4, dressed or rough | 41199 | 1803 | Free | Free. |
| 15 | 292 | Underwear, cotton, 12-pound | 31123 | 917 | 45% | 45. |
| 16 | 633 | Oil, palm, crude | 14260 | 54 | 1¢ lb. | 22–33. |
| 17 | 675 | Comforters, sateen cover, woolfilling | 36104 | 1111 | 35¢ and 37½% | 65–67. |
| 18 | 701 | Tablecloths, 64 by 64 | 30823 | 910 | 30% | 30. |
| 19 | 510 | Lumber, fir | 41040 | 401 | $1 M bd. ft. (50¢) | 17–35. |
| 20 | 250 | Men's work pants, 2.65 yards to pound | 31123 | 917 | 45% | 45. |
| 21 | 135 | Corn, canned | 12499 | 775 | 35% | 35. |
| 22 | 513 | Lumber, chestnut, 4 by 4, common | 41199 | 1803 | Free | Free. |
| 23 | 191 | Water closets, metal, enameled | 61415 | 339 | 5¢ lb. and 30% | 36–59. |
| 24 | 641 | Chlorine | 8301's | | | (Negligible imports.) |
| 25 | 10c | Hay | 11010 | 779 | $5 ton ($3) | 41–72 (50–72). |
| 26 | 582 | Tar, pine | 21193 | 97 | 1¢ lb. | 8–18 (10–18). |
| 27 | 461 | Wood screws, No. 10, 1-inch iron | 62082 | 338 | 25% | 25. |
| 28 | 504 | Drain tile, clay, 1,000 feet | 53832 | 202a | 70% | 70. |
| 29 | 175 | Pepper, black | 15512 | 781 | 5¢ lb | 11–25 (11–19). |
| 30 | 41 | Milk, 3.7 percent | 00380 | 707 | 6.5¢ gal | 22–43. |
| 31 | 242 | Shirts, 3.85 yards to pound | 31131 | 919 | 45% | 45. |
| 32 | 93 | Bread, before baking | 10700 | 1623 | Free | Free. |
| 33 | 260 | Gingham, 6.37 yards per pound (bleached) | 3057's | 904 | Various | 34–43. |
| 34 | 356 | Fuel oil, 36–40 | 50550 | 1733 | Free | Free. |
| 35 | 404 | Steel, merchant bars | 60081 | 304 | 0.5¢ lb. (0.4¢ lb.) | 19–26. |
| 36 | 498 | Brick, common building | 53006 | 201b | $1.25 M | 4–11 (4–10). |
| 37 | 327 | Burlap | 32470 | 1008 | 1¢ lb | 11–15. |
| 38 | 27c | Eggs | 00880 | 713 | 10¢ doz. | 54–74. |

TABLE II.—*Bureau of Labor Statistics wholesale price series, grouped according to depression sensitivity, with tariff information on the listed or similar commodities for years 1931–36 inclusive*—Continued

GROUP 7—Continued

| No. | Bureau of Labor Statistics No. | Commodity with brief description | Tariff information | | | |
|---|---|---|---|---|---|---|
| | | | Code No. | Paragraph | Tariff rate | Equivalent ad valorem range (percent) |
| 39 | 525 | Lumber, poplar | 41199 | 1803 | Free | Free. |
| 40 | 547 | Pigments, red lead, dry | 84217 | 72 | 2.75¢ lb | 31–71. |
| 41 | 745 | Tissue paper, white | 47289 | 1404 | 6¢ lb. and 20% | 31–39. |
| 42 | 306c | Silk yarn, thrown | 37992 | 1203 | 20% | 20. |
| 43 | 365 | Petroleum, crude | 50510 | 1733 | Free | Free. |
| 44 | 138 | Beans, canned, string, 2's | 12392 | 765 | 3¢ lb. | 46–65. |
| 45 | 249 | Pants, men's serge, 12½-ounce | 36401 | 1115a | 50¢ lb. and 50% | 56–58. |
| 46 | 427c | Pig iron | 60030 | 301 | $1.125 ton | 7–12. |
| 47 | 774 | Soap, 100 11-ounce cakes | 87199 | 80 | 15% | 15. |
| 48 | 738 | Linseed meal | 11150 | 730 | 3¢ lb. | 22–39 (28–39). |
| 49 | 358 | Gasoline, 54–58 | 50610 | 1733 | Free | Free. |
| 50 | 742 | Box board ton, 85 lb | 41199 | 1803(1) | do | Do. |
| 51 | 310 | Flannel, wool | 36032 | 1109 | 50¢ lb. and 55% | 77–85 (77–81). |
| 52 | 243 | Boy's suits, all wool, 12–14-ounce | 36401 | 1115a | 50¢ lb. and 50% | 56–58. |
| 53 | 290 | Hosiery, silk, 7-thread | 37370 | 1208 | 60% | 60. |
| 54 | 143 | Lamb, fresh | 00220 | 702 | 7¢ lb. | 39–117. |
| 55 | 144 | Mutton, dressed | 00210 | 702 | 5¢ lb. | 35–102. |
| 56 | 313 | Dress goods, women's wool | 36032 | 1109 | 50¢ lb. and 55% | 77–85 (77–81). |
| 57 | 266 | Percale, gray, yard 38½-inches wide | 305's | 904b | Various | 34–43. |
| 58 | 219 | Leather, kid, glazed | 03335 | 1530e | 25% | 25. |
| 59 | 406 | Steel bars, cold-rolled, finished | 60081 | 315 | 0.525¢ lb. | 20–21 (neg.). |
| 60 | 261c | Muslin, bleached | 305's | 904b | Various | 34–43. |
| 61 | 480 | Copper sheet, hot-rolled | 64300 | 381 | 2.5¢ lb. and 4¢ lb. | 7–20. |

GROUP 8

| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | 506 | Tile, hollow, building | 53832 | 202a | 70% | 70. |
| 2 | 403 | Reinforcing bars, ¾-inch rolled | 60051 | 304 | 3¢ lb. (0.25¢) | 20–45. |
| 3 | 244 | Men's suits, 13-ounce serge | 36401 | 1115a | 50¢ lb. and 50% | 56–58. |
| 4 | 366 | Petroleum, crude | 50510 | 1733 | Free | Free. |
| 5 | 766 | Neutral oil | 50750 | 1733 | do | Do. |
| 6 | 591 | Acid, stearic, distilled | 08200 | 1 | 25% | 25. |
| 7 | 657 | Bones, ground, 60 percent bone phosphate | 85110 | 1627 | Free | Free. |
| 8 | 258 | Cotton flannel, bleached, 4.5 yards per pound | 305's | 904 | Various | 34–43. |
| 9 | 493 | Radiator | 62099 | 397 | 45% | 45. |
| 10 | 741 | Boxboards, Manila lined chip | 46929 | 1750 | Free | Free. |
| 11 | 94 | Bread, before baking | 10790 | 1623 | do | Do. |
| 12 | 50 | Seed, timothy | 24130 | 763 | 2¢ lb. (1¢) | 10–31. |
| 13 | 485 | Yellow brass tube, seamless | 64583 | 381 | 8¢ lb. and 4¢ lb. | 32–67. |
| 14 | 287 | Hosiery, cotton, 220-needle, 5-ounce | 31101 | 909 | 50% | 50. |
| 15 | 549 | Litharge, powered | 84215 | 72 | 2.5¢ lb. | (Negligible 1931–35.) |
| 16 | 440 | Rivets, large ½-inch and more | 62054 | 332 | 1¢ lb. | 8–35. |
| 17 | 270c | Sheeting, bleached, 10.4 | 305 | 904 | Various | 34–43. |
| 18 | 527 | Lumber, spruce | 41060 | 401 | $1 M bd. ft. (50¢) | 17–26. |
| 19 | 674 | Blankets, 4–5 pounds | 38104 | 1111 | 33¢ and 37½% | 65–67. |
| 20 | 696 | Sheets | 30860 | 911b | 25% | 25. |
| 21 | 332 | Cotton rope, awning | 32370 | 923 | Free | Free. |
| 22 | 182 | Tea, Formosa | 15210 | 1783 | do | Do. |
| 23 | 168 | Glucose, corn sirup, 42° | 16542 | 503 | 2¢ lb. | 17–35. |
| 24 | 475 | Lead, pipe | 65080 | 392 | 2.275¢ lb. | 34–54. |
| 25 | 276 | Percale, print, 4.75 yards to pound | 305 | 904 | Various | 34–43. |
| 26 | 318c | Suitings, serge | 36030 | 1109 | 50¢ lb. and 50% | 85–86. |
| 27 | 451 | Steel strips, cold-rolled | 60969 | 313 | 2¢ lb. and 27% | 26–29. |
| 28 | 299c | Raw silk | 37020 | 1763 | Free | Free. |
| 29 | 86c | Cheese | 00469 | 710 | 7¢ lb. | 41–52 (47–52). |
| 30 | 222c | Leather | 03000 | 1530b(1) | 12½% | 12½. |
| 31 | 141c | Meat, beef | 00180 | 701 | 6¢ lb. | 49–87 (49–73). |
| 32 | 672 | Blankets, cotton, 2 pounds | 38843 | 911a | 30% | 30. |
| 33 | 221 | Leather, tanned | 03041 | 1530b(4) | 15% | 15. |
| 34 | 316 | Overcoating, per yard, 28-ounce | 36051 | 1109 | 50¢ lb. and 55% | 86–94 (86–87). |
| 35 | 129 | Peaches, dried | 13362 | 745 | 2¢ lb. | Negligible. |
| 36 | 656 | Ammonia, sulphate | 83110 | 6 | 7.5¢ lb. | 3–11. |
| 37 | 580 | Window sash, white pine | 42899 | 412 | 33 1/3% | 33⅓. |
| 38 | 259 | Cotton flannel, unbleached | 304's | 904b | Various | 35.8–50.3. |
| 39 | 127 | Apricots, dried | 13312 | 735 | 2¢ lb. | 17–23 |
| 40 | 478 | Copper rods, round, 1¼–3-inch | 64300 | 381 | 2½¢ lb. and 4¢ lb. | 7–20 |
| 41 | 476 | Quicksilver, flask, 1/75 | 66620 | 386 | 25¢ lb. | 21–69. |
| 42 | 278 | Tire fabrics | 32326 | 904e | 25% | 25. |
| 43 | 322 | Suitings, 12-ounce serge | 36030 | 1109 | 50¢ lb. and 50% | 85–86. |
| 44 | 245 | Suits, serge, 15-ounce | 36401 | 1115a | 50¢ lb. and 50% | 56–58. |
| 45 | 118 | Rice, clean | 10530 | 727 | 2½¢ lb. | 85–117. |
| 46 | 130 | Prunes, dried | 13352 | 748 | 2¢ lb. | 13–22. |
| 47 | 673 | Blankets, cotton, part wool, 3½-pound | 38843 | 911a | | 30. |
| 48 | 172 | Oleomargarine, uncolored | 00365 | 709 | 14¢ lb. | 74–139. |
| 49 | 524 | Lumber, ponderosa pine | 41070 | 401 | $1 M bd. ft. (50¢) | 17–18. |
| 50 | 747 | Wood pulp, unbleached | 46000 | 1716 | Free | Free. |
| 51 | 539 | Carbon black | 84201 | 71 | 20% | 20. |
| 52 | 486 | Brass wire, round | 64586 | 316a | 25% | 25. |
| 53 | 253 | Denims, cotton, 2.2 yards to pound | 305 | 904 | Various | 34–43 |
| 54 | 256 | Duck, 8-ounce, base price 0.25¢ | 305 | 904 | do | 34–43. |
| 55 | 91 | Milk, powdered skim | 00411 | 708b | 3¢ lb. | 33–77 (33–67). |
| 56 | 126 | Apples, evaporated | 13301 | 734 | 2¢ lb. | 7–37. |
| 57 | 740 | Boxboard, chip | 46929 | 1750 | Free | Free |
| 58 | 482 | Silver bar | | 1638 | do | Do |
| 59 | 477 | Yellow brass rods, ⅝ to 2¾-inch, rod | 64580 | 381 | 4¢ lb. | 11–66. |
| 60 | 39 | Hay, alfalfa | 11010 | 779 | $5 ton | 40–72 (50–72). |
| 61 | 784 | Paraffin wax | 50760 | 1733 | Free | Free. |
| 62 | 479 | Brass, 2 to 8-inch sheets | 64580 | 381 | 4¢ lb. | 11–66. |

TABLE II.—*Bureau of Labor Statistics wholesale price series, grouped according to depression sensitivity, with tariff information on the listed or similar commodities for years 1931–36 inclusive*— Continued

GROUP 9

| No. | Bureau of Labor Statistics No. | Commodity with brief description | Tariff information | | | |
|---|---|---|---|---|---|---|
| | | | Code No. | Paragraph | Tariff rate | Equivalent ad valorem range (percent) |
| 1 | 709 | Tubs, galvanized iron | 62099 | 397 | 45% | 45. |
| 2 | 103c | Flour, wheat | 10720 | 729 | $1.04 100 lbs. | 30–186. |
| 3 | 102 | Flour, rye | 10926 | 728 | 45¢ 100 lbs | 8–35 (10–35). |
| 4 | 691 | Pails, galvanized iron, 10-quart | 62050 | 397 | 45% | 45. |
| 5 | 317 | Overcoating, wool, 18-ounce | 36051 | 1109 | 50¢ lb. and 55% | 86–94 (86–87). |
| 6 | 310 | Twine, java sisal | 34175 | 1005b | 40% (20%) | 20–40. |
| 7 | 286 | Hosiery, cotton, 164-needle | 31101 | 916a | 50% | 50. |
| 8 | 324 | Yarns, worsted, white | 35701 | 1107 | 40¢ lb. and 45% | 77–82. |
| 9 | 329 | Jute, raw | 32410 | 1684 | Free | Free. |
| 10 | 555 | Shellac | 21072 | 1707 | do | Do. |
| 11 | 325c | Woolen yarn | 35751 | 1107 | 40¢ lb. and 45% | 75–80. |
| 12 | 114 | Macaroni and spaghetti (tins) | 10771 | 725 | 3¢ lb. | 18–22. |
| 13 | 431 | Pig iron, No. 2 | 60030 | 301 | $1.125 ton | 7–12. |
| 14 | 277 | Ticking, 2.05 yards to pound | 301's | 901b | Various | 36.8–50.3. |
| 15 | 279 | Tire fabrics, corded, 10–5 | 32326 | 904e | 25% | 25. |
| 16 | 621 | Quebracho extract, solid, 63 percent | 23410 | 38 | 15% | 15. |
| 17 | 257 | Duck No. 8, 36-inch, base price 64 cents | 305 | 904 | Various | 34–43. |
| 18 | 637 | Alcohol, ethyl, grain, 188 proof | 82313 | 4 | 15¢ gal. | 3–12. |
| 19 | 552 | Linseed oil, raw | 22540 | 53 | 4.5¢ lb | 77–124. |
| 20 | 140 | Beef, cured, 200-pound barrel | 00280 | 706 | 6¢ lb. | 29–76 (29–70). |
| 21 | 151 | Veal, fresh | 00190 | 701 | do | 61–160. |
| 22 | 98 | Oatmeal | 10922 | 726 | 80¢ 100 lbs. | 9–17. |
| 23 | 174 | Peanut butter, 50-pound tins | 13800 | 759 | 7¢ lb. | 21–50 (negligible). |
| 24 | 166 | Fish, mackerel, canned | 00722 | 719(4) | 25% | 25. |
| 25 | 215 | Goatskins | 02410 | 1765 | Free | Free. |
| 26 | 148 | Pork, hams | 00300 | 703 | 3.25¢ lb | 11–16. |
| 27 | 471 | Babbit metal, per pound | 65061 | 392 | 2.125¢ lb | 2–7. |
| 28 | 281c | Cotton yarn | 302's | 901 | Various | 28–33. |
| 29 | 505 | Floor tiles, ceramic unglazed | 53811 | 202a | 50% | 50. |
| 30 | 272c | Sheeting | 301's | 904b | Various | 36.8–50.3. |
| 31 | 255 | Drillings, cotton, 2.85 yards to pound | 305 | 904 | do | 34–43. |
| 32 | 588 | Oil, red, oleic acid | 08216 | 1 | 20% | 20. |
| 33 | 12 | Calves | 00100 | 701 | 2.5¢ lb. (1.5¢) | 16–89 (46–89). |
| 34 | 6sc | Butter | 00440 | 709 | 14¢ lb | 53–89. |
| 35 | 357 | Gasoline | 50610 | 1733 | Free | Free. |
| 36 | 312 | Suiting, 12-ounce, 56-inch | 36051 | 1109a | 50¢ lb. and 55% | 86–87. |
| 37 | 614 | Copper sulphate, blue vitriol 99 percent | 82630 | 1659 | Free | Free. |
| 38 | 54 | Potatoes, sweet | 12119 | 774 | 50% | 50. |
| 39 | 634 | Palm oil | 22430 | 1732 | Free | Free. |
| 40 | 339 | Cotton twine | 32370 | 923 | 40% | 40. |
| 41 | 268 | Print cloths | 305 | 904 | Various | 34–43. |
| 42 | 517 | Lumber, gum, plain sap, 4 by 4 | 41199 | 1803 | Free | Free. |
| 43 | 773 | Soap flakes, laundry | 87199 | 80 | 15% | 15. |
| 44 | 36 | Apples | 13110 | 734 | 25¢ bu. of 50 lbs. (15¢) | 85–28 (14–28). |
| 45 | 55c | Potatoes, white | 12041 | 771 | 75¢ 100 lbs. | 43–89 (53–89). |
| 46 | 284c | Cotton yarn | 302's | 901b | Various | 28–33. |
| 47 | 49 | Flaxseed, bushel of 56 pounds | 22330 | 762 | 65¢ bu | 56–99 (61–99). |
| 48 | 239 | Overalls, cotton | 31135 | 919 | 37.5% | 37.5. |
| 49 | 183 | Coconut oil, crude | 22425 | 54 | 2¢ lb. | 11–35. |
| 50 | 15c | Steers | 00105 | 701 | 3¢ lb. (2¢ lb.) | 40–67. |
| 51 | 529 | Cypress, shingles | 41922 | 1760 | Free | Free. |
| 52 | 267 | Print cloths 7.6 yards to pound, 27-inch | 305 | 904 | Various | 34–43. |
| 53 | 20 | Lambs | 00120 | 702 | $3 each | 25–55. |
| 54 | 149 | Mess pork, 200-pound barrel | 00310 | 703 | 3.25¢ | 8–12 (8–11). |
| 55 | 24c | Cotton, middling | 30021 | 783 | 7¢ lb. | 39–75 (44–75). |
| 56 | 528 | Lumber, cedar shingles | 41921 | 1760 | Free | Free. |
| 57 | 776 | Powdered soap, laundry | 87199 | 80 | 15% | 15. |
| 58 | 519 | Lumber, maple, hard | 41194 | 402 | 8% (4%) | 4–8. |
| 59 | 58 | Potatoes, white | 12041 | 771 | 0.75¢ lb | 43–89 (53–89). |
| 60 | 473 | Lead, pig, desilverized | 65050 | 392 | 2.125¢ lb | 69–168. |
| 61 | 42 | Hops | 28100 | 780 | 24¢ lb. | 39–176. |
| 62 | 265 | Osnaburg, 30-inch, 7-ounce | 305 | 904 | Various | 34–43. |

GROUP 10

| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | 161 | Copra, dried | 22320 | 1727 | Free | Free. |
| 2 | 13c | Cows | 00101 | 701 | 3¢ lb. (2¢) | 40–67. |
| 3 | 248 | Pants, boys', wool | 36400 | 1115a | 33¢ and 45% | 58–61. |
| 4 | 184 | Vegetable oil, corn, crude | 14220 | 53 | 20% | 20. |
| 5 | 434 | Pipe, cast-iron 6-inch | 60910 | 327 | 25% (15%) | 15–25. |
| 6 | 748 | Wood pulp, unbleached | 46000 | 1716 | Free | Free. |
| 7 | 4 | Oats, bushel of 32 pounds | 10410 | 726 | 16¢ bu | 42–100. |
| 8 | 47 | Seed, alfalfa | 24010 | 763 | 8¢ (4¢ lb.) | 30–108 (40). |
| 9 | 349 | Coke | 50080 | 1650 | Free | Free. |
| 10 | 355 | Fuel oil, 24–26 gravity | 50550 | 1733 | do | Do. |
| 11 | 511 | Lumber, pine, lath, ¾s-inch | 41070 | 401 | $1 M bd. ft. (50¢) | 17–18. |
| 12 | 488 | Zinc, pig | 65582 | 394 | $1.75 lb. | 52–65. |
| 13 | 115 | Bacon | 00300 | 703 | 3.25¢ lb | 11–16. |
| 14 | 59c | Wool | 35060 | 1101a | 0.24¢ lb | 112–139. |
| 15 | 516 | Lumber, fir | 41040 | 401 | $1 M bd. ft. (50¢) | 17–35. |
| 16 | 487 | Copper wire, No. 8 | 64308 | 316a | 25% | 25. |
| 17 | 737 | Cottonseed meal | 11140 | 730 | 3¢ lb. | 27–57. |
| 18 | 6c | Wheat, bushel of 60 pounds | 10665 | 729 | 42¢ bu | 43–84. |
| 19 | 19c | Sheep | 00120 | 702 | $3 each | 25–55. |
| 20 | 173 | Oleo oil | 00362 | 701 | 1¢ lb. | 6–16. |
| 21 | 1 | Barley, malting, bushel of 48 pounds | 10200 | 722 | 20¢ bu. | 23–60. |
| 22 | 472 | Copper, ingot, electrolytic | 64170 | 1658 | Free | Free. |
| 23 | 188 | Vegetable oil, soybean, crude | 22550 | 54 | 3.5¢ lb | 70–127 (79–127). |
| 24 | 515 | Lumber, fir | 41040 | 401 | $1 M bd. ft. (50¢) | 17–35. |
| 25 | 216 | Kips | 02050 | 153a | 10% | 10. |
| 26 | 645 | Glycerin | 82010 | 42 | 2¢ lb. (1.66¢ lb.) | 6–33 (17–33). |
| 27 | 483 | Solder | 65061 | 392 | 2.125¢ lb | 2–7. |

TABLE II.[1]—*Bureau of Labor Statistics wholesale price series, grouped according to depression sensitivity, with tariff information on the listed or similar commodities for years 1931–36 inclusive*—Continued

GROUP 10—Continued

| No. | Bureau of Labor Statistics No. | Commodity with brief description | Tariff information | | | |
|---|---|---|---|---|---|---|
| | | | Code No. | Paragraph | Tariff rate | Equivalent ad valorem range (percent) |
| 28 | 52 | Beans, dried | 11920 | 765 | 3¢ lb. | 98–133. |
| 29 | 170 | Lard | 00360 | 703 | 3¢ lb. | 12–27 (12–26). |
| 30 | 150 | Pork, hams | 00300 | 703 | 3.25¢ lb. | 11–16. |
| 31 | 335 | Sisal | 34010 | 1684 | Free | Free. |
| 32 | 187 | Peanut oil, crude | 14270 | 54 | 4¢ lb. | 65–96. |
| 33 | 185 | Cottonseed oil | 14231 | 54 | 3¢ lb. | 63–66. |
| 34 | 522 | Lumber, pine | 41070 | 401 | $1 M bd. ft. (50c) | 17–18. |
| 35 | 181 | Tallow, edible | 08155 | 701 | 5¢ lb. | 8–16 (11–16). |
| 36 | 116 | Corn meal, granulated | 10919 | 724 | 5¢ lb. | 4–42. |
| 37 | 5 | Rye, bushel of 56 pounds | 10440 | 728 | 15¢ bu. | 10–32. |
| 38 | 65c | Wool | 35060 | 1101a | 24¢ lb. | 112–139. |
| 39 | 211 | Cow hides | 02010 | 1530a | 10% | 10. |
| 40 | 631 | Tallow | 08155 | 701 | 0.5¢ lb. | 8–16 (11–16). |
| 41 | 46 | Peanuts | 13680 | 759 | 4.25¢ lb. | 144–209. |
| 42 | 328 | Hemp, manila | 39012 | 1504a | 15% | 15. |
| 43 | 484 | Tin, pig | 65510 | 1786 | Free | Free. |
| 44 | 736 | Millfeed, bran | 11902 | 730 | 10% | 10. |
| 45 | 551 | China wood oil | 22606 | 53 | 20% | 20. |
| 46 | 554 | Rosin, yard basis | 21891 | 90 | 5% | 5. |
| 47 | 17c | Hogs | 00130 | 703 | 2¢ lb. | 16–28. |
| 48 | 665 | Tankage, ton | 09750 | 1780 | Free | Free. |
| 49 | 739 | Millfeed | 11902 | 730 | 10% | 10. |
| 50 | 212c | Hides, steers | 02010 | 1530a | 10% | 10. |
| 51 | 445 | Steel, scrap, old material | 60040 | 301 | 75¢ ton | 5–12. |
| 52 | 214 | Calfskins, 8–15 pounds | 02070 | 1530a | 10% | 10. |
| 53 | 51 | Tobacco, leaf | 26050 | 601 | 35¢ lb. | 66–115. |
| 54 | 146 | Pork, cured | 00310 | 703 | 3.25¢ lb. | 11–16. |
| 55 | 2c | Corn | 10310 | 724 | 25¢ bu. | 47–57. |
| 56 | 48 | Seed, clover | 24010 | 763 | 8¢ lb. | 40–108. |
| 57 | 762 | Asbestos pipe covering | 55280 | 1501d | 25% | 25. |
| 58 | 470 | Antimony | 66511 | 376 | 2¢ lb. | 18–56. |
| 59 | 147 | Pork, cured | 00310 | 703 | 3.25¢ lb. | 8–12 (8–11). |
| 60 | 217 | Sheep pelts | 02320 | 1765 | Free | Free. |
| 61 | 115 | Corn meal | 10919 | 725 | .50¢ lb. | 4–42. |
| 62 | 113 | Hominy grits | 10919 | 724 | .50¢ lb. | 4–42. |
| 63 | 751c | Rubber, crude | 20110 | 1697 | Free | Free. |

# APPENDIX 6.—CHANGES IN HOURLY EARNINGS, WEEKLY HOURS, AND EMPLOYMENT 1929, 1932–36[1]

## The Character of the Data

Until recent years the data on hourly earnings for industrial workers and weekly hours worked have been unsatisfactory both from the point of view of the number of industries covered and the frequency with which they were covered. The Bureau of Labor Statistics made various spot studies in certain industries but no attempt was made to establish a continuous series. In 1932 the Bureau began to make good the deficiencies by collecting monthly figures on earnings and hours for a considerable range of manufacturing industries and some nonmanufacturing industries. The early results of this new venture were, of course, less satisfactory than the later.

In this study both the earlier and later figures collected by the Bureau of Labor Statistics, up to 1936, were compared with estimates for 1929 in order to show the changes which had occurred over the period. The 1929 estimates were based on the employment and pay-roll data which the United States Bureau of Labor Statistics had been collecting for one week in each month for some years before 1929. By dividing the pay-roll figures by the employment figures weekly earnings were obtained. Data on weekly hours worked, however, were not available in the Bureau's records. These were obtained by multiplying the prevailing hours worked as reported by the Census for 1929 with the percent of full time worked as reported by the Bureau. Having the weekly earnings and the weekly hours, the hourly earnings were derived by simple division.

## Wage and Employment Results, 1929, 1932-36

Table I presents hourly earnings, weekly hours worked, weekly earnings, workers employed, and man-hours worked for 44 manufacturing industries in 1929, and annually from 1932 to 1936. The 44 industries include 15 industries, as defined by the Census, which employed, in 1935, over 100,000 persons each, 30 which employed from 25,000 to 100,000 each, and 9 under 25,000. All combined these industries employed 4,359,000 wage earners or 60 percent of all wage earners employed in manufacturing.[2] The large and medium-sized industries included in the table employed more than two-thirds of the wage earners employed by the large and medium-sized industries listed in appendix 7. The small industries included in the table covered less than 10 percent of the wage earners employed by industries employing less than 25,000 persons.

The hourly earnings in 1929 in each of the 44 industries were derived, as just indicated, by dividing weekly earnings as computed from the employment and payroll figures of the Bureau of Labor Statistics by the weekly hours as computed from the Census and Bureau figures. Another possible method calculating hourly earnings was to divide the Census wages by annual man-hours as derived by multiplying the weekly hours (obtained as described above) first by 52 and then by the average number employed. The results obtained by the first method are compared with the results obtained by this second method in table I–A. In 38 of the 44 industries, the hourly earnings as calculated by the second method are within 10 percent of the figures obtained by the first; in the remaining six industries they are subject to serious question. However, no conclusions from the results on all these industries have been drawn in this report which assume a greater reliability of these figures than that indicated above.

In table II, the industries are combined, first on the basis of durable goods industries, and semi- and non-durable goods industries, and then, on the basis of concentration. Industries in which the four largest enterprises employed at least 30 percent of all workers are considered concentrated; the others, not concentrated. The hourly earnings for all industries in each class are unweighted averages. Weighted averages can be derived from table I on the basis of the number employed in each industry. There is no significant difference, however, between the two types of averages.

[1] Appendix 6 was prepared by Edward B. Mittelman, assisted by Nancy Hart and Paul A. Fischer.

[2] Some of the industries for which wage data are presented combine two or more industries separately reported in the *Census of Manufactures* for 1935, and some exclude industries separately reported, at one time or another, between 1929 and 1935. The 44 industries given in table I are equivalent to more than 44 on the basis of the Census classification. Thus the number of wage earners in any one of the 44 industries in table I might not coincide with the number in the Census industry having the same name.

TABLE I.—*Hourly earnings, weekly hours, weekly earnings, workers employed, man-hours worked in certain selected industries, 1929, 1932–36*

| Industry—Classifications | 1929 | | 1932 | | 1933 | | 1934 | | 1935 | | 1936 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Estimated figure | Index | Estimated figure | Index | Estimated figure | Index | Estimated figure | Index | Estimated figure | Index | Estimated figure | Index |
| Iron and steel and their products, not including machinery: | | | | | | | | | | | | |
| Blast furnaces, steel works, and rolling mills: | | | | | | | | | | | | |
| Hourly earnings (cents) | 65.5 | 100.0 | 52.7 | 80.5 | 53.1 | 81.1 | 63.2 | 96.5 | 66.4 | 101.4 | 67.1 | 102.4 |
| Weekly hours | 49.1 | 100.0 | 26.1 | 53.2 | 32.5 | 66.2 | 30.5 | 62.1 | 34.9 | 71.1 | 40.9 | 83.3 |
| Weekly earnings (dollars) | 32.16 | 100.0 | 13.75 | 42.8 | 17.26 | 53.7 | 19.28 | 60.0 | 23.17 | 72.0 | 27.44 | 85.3 |
| Workers employed | 419,534 | 100.0 | 234,939 | 56.0 | 288,945 | 68.9 | 346,955 | 82.7 | 374,808 | 89.3 | 436,315 | 104.0 |
| Man-hours worked | 20,599,119 | 100.0 | 6,131,908 | 29.8 | 9,390,712 | 45.6 | 10,582,128 | 51.4 | 13,080,799 | 63.5 | 17,845,284 | 86.6 |
| Cast-iron pipe: | | | | | | | | | | | | |
| Hourly earnings (cents) | 54.2 | 100.0 | 44.4 | 81.9 | 45.3 | 83.6 | 48.9 | 90.2 | 49.0 | 90.4 | 49.3 | 91.0 |
| Weekly hours | 43.1 | 100.0 | 32.5 | 75.4 | 29.7 | 68.9 | 29.7 | 68.9 | 31.0 | 71.9 | 38.2 | 88.6 |
| Weekly earnings (dollars) | 23.36 | 100.0 | 14.43 | 61.8 | 13.45 | 57.6 | 14.52 | 62.2 | 15.19 | 65.0 | 18.83 | 80.6 |
| Workers employed | 19,741 | 100.0 | 10,404 | 52.7 | 9,454 | 47.9 | 13,029 | 66.0 | 13,543 | 68.6 | 16,879 | 85.5 |
| Man-hours worked | 850,837 | 100.0 | 338,130 | 39.7 | 280,784 | 33.0 | 386,961 | 45.5 | 419,833 | 49.3 | 644,778 | 75.8 |
| Hardware: | | | | | | | | | | | | |
| Hourly earnings (cents) | 52.9 | 100.0 | 50.6 | 95.7 | 46.5 | 87.9 | 53.8 | 101.7 | 54.9 | 103.8 | 55.8 | 105.5 |
| Weekly hours | 49.0 | 100.0 | 31.4 | 64.1 | 35.2 | 71.8 | 33.1 | 67.6 | 37.1 | 75.7 | 40.3 | 82.2 |
| Weekly earnings (dollars) | 25.92 | 100.0 | 15.89 | 61.3 | 16.37 | 63.2 | 17.81 | 68.7 | 20.37 | 78.6 | 22.49 | 86.8 |
| Workers employed | 52,306 | 100.0 | 30,285 | 57.9 | 32,550 | 62.2 | 41,269 | 78.9 | 41,473 | 79.3 | 45,454 | 86.9 |
| Man-hours worked | 2,562,994 | 100.0 | 950,949 | 37.1 | 1,145,760 | 44.7 | 1,366,004 | 53.3 | 1,538,648 | 60.0 | 1,831,796 | 71.5 |
| Steam and hot-water heating apparatus and steam fittings: | | | | | | | | | | | | |
| Hourly earnings (cents) | 62.8 | 100.0 | 54.3 | 86.5 | 51.6 | 82.2 | 58.9 | 93.8 | 59.1 | 94.1 | 59.1 | 94.1 |
| Weekly hours | 46.5 | 100.0 | 30.7 | 66.0 | 33.5 | 72.0 | 34.5 | 74.2 | 37.3 | 80.2 | 41.4 | 89.0 |
| Weekly earnings (dollars) | 29.20 | 100.0 | 16.67 | 57.1 | 17.29 | 59.2 | 20.32 | 69.6 | 22.04 | 75.5 | 24.47 | 83.8 |
| Workers employed | 39,621 | 100.0 | 20,484 | 51.7 | 22,301 | 56.3 | 22,980 | 58.0 | 27,081 | 68.4 | 34,906 | 88.1 |
| Man-hours worked | 1,842,376 | 100.0 | 628,859 | 34.1 | 747,084 | 40.6 | 792,810 | 43.0 | 1,010,121 | 54.8 | 1,445,108 | 78.4 |
| Stoves: | | | | | | | | | | | | |
| Hourly earnings (cents) | 62.1 | 100.0 | 49.8 | 80.2 | 48.2 | 77.6 | 53.8 | 86.6 | 56.4 | 90.8 | 58.2 | 93.7 |
| Weekly hours | 45.3 | 100.0 | 32.9 | 72.6 | 35.7 | 78.8 | 35.1 | 77.5 | 38.0 | 83.9 | 41.7 | 92.1 |
| Weekly earnings (dollars) | 28.13 | 100.0 | 16.38 | 58.2 | 17.21 | 61.2 | 18.88 | 67.1 | 21.43 | 76.2 | 24.27 | 86.3 |
| Workers employed | 46,616 | 100.0 | 25,825 | 55.4 | 30,193 | 64.8 | 37,712 | 80.9 | 41,739 | 89.5 | 45,078 | 96.7 |
| Man-hours worked | 2,111,705 | 100.0 | 849,642 | 40.2 | 1,077,890 | 51.0 | 1,323,691 | 62.7 | 1,586,082 | 75.1 | 1,879,753 | 89.0 |
| Structural and ornamental work: | | | | | | | | | | | | |
| Hourly earnings (cents) | 59.2 | 100.0 | 54.3 | 91.7 | 48.0 | 81.1 | 57.9 | 97.8 | 58.6 | 99.0 | 58.4 | 98.6 |
| Weekly hours | 51.0 | 100.0 | 32.2 | 63.1 | 32.8 | 64.3 | 33.3 | 65.3 | 35.2 | 69.0 | 41.7 | 81.8 |
| Weekly earnings (dollars) | 30.19 | 100.0 | 17.48 | 57.9 | 15.74 | 52.1 | 19.28 | 63.9 | 20.63 | 68.3 | 24.35 | 80.7 |
| Workers employed | 54,947 | 100.0 | 24,561 | 44.7 | 21,377 | 38.9 | 26,924 | 49.0 | 27,243 | 49.6 | 34,562 | 62.9 |
| Man-hours worked | 2,802,297 | 100.0 | 790,864 | 28.2 | 701,166 | 25.0 | 896,569 | 32.0 | 958,954 | 34.2 | 1,441,235 | 51.4 |
| Machinery, not including transportation equipment: | | | | | | | | | | | | |
| Agricultural implements: [1] | | | | | | | | | | | | |
| Hourly earnings (cents) | 59.2 | 100.0 | 48.4 | 81.8 | 46.7 | 78.9 | 54.1 | 91.4 | 59.2 | 100.0 | 61.0 | 103.0 |
| Weekly hours | 50.2 | 100.0 | 31.8 | 63.3 | 33.7 | 67.1 | 36.5 | 72.7 | 39.5 | 78.7 | 39.7 | 79.1 |
| Weekly earnings (dollars) | 29.72 | 100.0 | 15.39 | 51.8 | 15.74 | 53.0 | 19.75 | 66.5 | 23.38 | 78.7 | 24.22 | 81.5 |

See footnotes at end of table.

TABLE I.—*Hourly earnings, weekly hours, weekly earnings, workers employed, man-hours worked in certain selected industries, 1929, 1932–36* Continued

| Industry Classifications | 1929 | | 1932 | | 1933 | | 1934 | | 1935 | | 1936 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Estimated figure | Index | Estimated figure | Index | Estimated figure | Index | Estimated figure | Index | Estimated figure | Index | Estimated figure | Index |
| Machinery, not including transportation equipment—Continued. | | | | | | | | | | | | |
| Agricultural implements—Continued | | | | | | | | | | | | |
| Workers employed | 41,663 | 100.0 | 10,374 | 24.9 | 11,140 | 26.7 | 18,760 | 45.1 | 26,450 | 63.5 | 28,914 | 69.4 |
| Man-hours worked | 2,091,483 | 100.0 | 329,893 | 15.8 | 375,118 | 17.9 | 685,845 | 32.8 | 1,044,775 | 50.0 | 1,117,886 | 53.9 |
| Electrical machinery, apparatus, and supplies: | | | | | | | | | | | | |
| Hourly earnings (cents) | 63.7 | 100.0 | 59.3 | 93.1 | 57.1 | 89.6 | 61.1 | 95.9 | 62.3 | 97.8 | 62.4 | 98.0 |
| Weekly hours | 47.8 | 100.0 | 30.9 | 64.6 | 33.1 | 69.2 | 33.3 | 69.7 | 36.8 | 77.0 | 39.9 | 83.5 |
| Weekly earnings (dollars) | 30.45 | 100.0 | 18.32 | 60.2 | 18.90 | 62.1 | 20.35 | 66.8 | 22.93 | 75.3 | 24.80 | 81.8 |
| Workers employed | 277,942 | 100.0 | 132,300 | 47.6 | 130,857 | 47.1 | 158,427 | 57.0 | 179,641 | 64.6 | 199,830 | 71.9 |
| Man-hours worked | 13,285,628 | 100.0 | 4,088,070 | 30.8 | 4,331,307 | 32.6 | 5,275,619 | 39.7 | 6,610,789 | 49.8 | 7,973,616 | 60.0 |
| Foundry and machine-shop products: [1] | | | | | | | | | | | | |
| Hourly earnings (cents) | 63.5 | 100.0 | 55.1 | 86.8 | 53.2 | 83.8 | 58.7 | 92.4 | 59.9 | 94.3 | 60.1 | 94.6 |
| Weekly hours | 48.6 | 100.0 | 30.0 | 61.7 | 32.7 | 67.3 | 34.7 | 71.4 | 37.8 | 77.8 | 42.4 | 87.2 |
| Weekly earnings (dollars) | 30.86 | 100.0 | 16.53 | 53.6 | 17.40 | 56.4 | 20.37 | 66.0 | 22.64 | 73.4 | 25.48 | 82.6 |
| Workers employed | 154,141 | 100.0 | 208,588 | 45.9 | 219,517 | 48.3 | 291,297 | 64.1 | 316,167 | 69.6 | 381,730 | 84.0 |
| Man-hours worked | 22,085,843 | 100.0 | 6,257,640 | 28.3 | 7,178,206 | 32.5 | 10,108,006 | 45.8 | 11,951,113 | 54.1 | 16,185,352 | 73.3 |
| Machine tools: | | | | | | | | | | | | |
| Hourly earnings (cents) | 64.1 | 100.0 | 60.4 | 94.2 | 56.8 | 88.6 | 60.4 | 94.2 | 62.4 | 97.3 | 63.6 | 99.2 |
| Weekly hours | 51.3 | 100.0 | 31.0 | 60.4 | 33.9 | 66.1 | 37.2 | 72.5 | 41.5 | 80.9 | 44.6 | 86.9 |
| Weekly earnings (dollars) | 32.88 | 100.0 | 18.72 | 56.9 | 19.26 | 58.6 | 22.47 | 68.3 | 25.90 | 78.8 | 28.37 | 86.3 |
| Workers employed | 47,391 | 100.0 | 11,943 | 25.2 | 12,714 | 26.8 | 21,421 | 45.2 | 28,165 | 59.4 | 36,633 | 77.3 |
| Man-hours worked | 2,431,158 | 100.0 | 370,233 | 15.2 | 431,005 | 17.7 | 796,861 | 32.8 | 1,168,848 | 48.1 | 1,633,832 | 67.2 |
| Radios and phonographs: | | | | | | | | | | | | |
| Hourly earnings (cents) | 548.2 | 100.0 | 46.8 | 97.1 | 44.7 | 92.7 | 54.0 | 112.0 | 54.2 | 112.4 | 54.0 | 112.0 |
| Weekly hours | 548.4 | 100.0 | 36.5 | 75.4 | 36.7 | 75.8 | 33.7 | 69.6 | 35.9 | 74.2 | 37.3 | 77.1 |
| Weekly earnings (dollars) | 24.33 | 100.0 | 17.08 | 73.2 | 16.10 | 70.3 | 18.20 | 78.0 | 19.46 | 83.4 | 20.14 | 86.3 |
| Workers employed | 65,196 | 100.0 | 25,622 | 39.3 | 32,879 | 50.4 | 50,206 | 77.1 | 44,792 | 68.7 | 49,549 | 76.0 |
| Man-hours worked | 3,155,486 | 100.0 | 935,203 | 29.6 | 1,206,659 | 38.2 | 1,693,904 | 53.7 | 1,608,033 | 51.0 | 1,848,178 | 58.6 |
| Transportation equipment: | | | | | | | | | | | | |
| Automobiles: | | | | | | | | | | | | |
| Hourly earnings (cents) | 69.1 | 100.0 | 562.8 | 90.9 | 59.3 | 85.8 | 69.0 | 99.9 | 73.5 | 106.4 | 77.0 | 111.4 |
| Weekly hours | 37.6 | 100.0 | 531.9 | 67.0 | 35.2 | 73.9 | 33.6 | 70.6 | 37.3 | 78.4 | 38.5 | 80.9 |
| Weekly earnings (dollars) | 32.80 | 100.0 | 20.03 | 60.9 | 20.87 | 63.5 | 23.18 | 70.5 | 27.42 | 83.4 | 29.64 | 90.1 |
| Workers employed | 447,448 | 100.0 | 243,442 | 54.4 | 243,644 | 54.4 | 356,169 | 79.6 | 387,801 | 86.7 | 371,529 | 83.1 |
| Man-hours worked | 21,208,525 | 100.0 | 7,764,843 | 36.5 | 8,575,243 | 40.3 | 11,967,278 | 56.2 | 14,464,977 | 67.9 | 14,315,116 | 67.2 |
| Shipbuilding: | | | | | | | | | | | | |
| Hourly earnings (cents) | 64.6 | 100.0 | 63.5 | 98.3 | 60.8 | 94.1 | 72.8 | 112.7 | 75.1 | 116.3 | 76.2 | 118.0 |
| Weekly hours | 46.5 | 100.0 | 34.4 | 74.0 | 31.0 | 66.7 | 31.0 | 66.7 | 32.7 | 70.3 | 35.7 | 76.8 |
| Weekly earnings (dollars) | 30.04 | 100.0 | 21.84 | 72.7 | 18.85 | 62.7 | 22.57 | 75.1 | 24.56 | 81.8 | 27.20 | 90.5 |
| Workers employed | 55,089 | 100.0 | 36,249 | 65.8 | 30,885 | 56.1 | 40,516 | 73.6 | 44,830 | 81.4 | 58,449 | 106.1 |
| Man-hours worked | 2,561,638 | 100.0 | 1,246,966 | 48.7 | 957,135 | 37.4 | 1,256,926 | 49.1 | 1,465,941 | 57.2 | 2,086,629 | 81.5 |
| Nonferrous metals and their products: | | | | | | | | | | | | |
| Brass, bronze, and copper products: | | | | | | | | | | | | |
| Hourly earnings (cents) | 56.9 | 100.0 | 50.7 | 89.1 | 49.5 | 87.0 | 56.1 | 98.6 | 57.9 | 101.8 | 59.5 | 104.6 |
| Weekly hours | 50.1 | 100.0 | 32.6 | 65.1 | 36.0 | 71.9 | 35.8 | 71.5 | 39.3 | 78.4 | 41.6 | 83.0 |
| Weekly earnings (dollars) | 28.51 | 100.0 | 16.53 | 58.0 | 17.82 | 62.5 | 20.08 | 70.4 | 22.75 | 79.8 | 24.75 | 86.8 |
| Workers employed | 79,183 | 100.0 | 40,700 | 51.4 | 47,784 | 60.3 | 56,457 | 71.3 | 62,935 | 79.5 | 71,581 | 90.4 |
| Man-hours worked | 3,967,068 | 100.0 | 1,326,820 | 33.4 | 1,720,224 | 43.4 | 2,021,161 | 50.9 | 2,373,346 | 62.3 | 2,977,770 | 75.1 |
| Silverware and plated ware: | | | | | | | | | | | | |
| Hourly earnings (cents) | 561.5 | 100.0 | 51.1 | 84.1 | 47.8 | 77.7 | 54.1 | 88.5 | 58.0 | 94.3 | 58.4 | 95.0 |
| Weekly hours | 547.3 | 100.0 | 36.7 | 77.6 | 37.1 | 78.4 | 36.8 | 77.8 | 37.3 | 78.9 | 39.0 | 82.5 |
| Weekly earnings (dollars) | 29.09 | 100.0 | 18.75 | 64.5 | 17.73 | 60.9 | 20.02 | 68.8 | 21.63 | 74.3 | 22.78 | 78.3 |
| Workers employed | 15,735 | 100.0 | 9,126 | 58.0 | 9,177 | 58.3 | 10,716 | 68.1 | 10,194 | 64.8 | 9,079 | 57.7 |
| Man-hours worked | 741,266 | 100.0 | 334,924 | 45.0 | 340,467 | 45.7 | 394,349 | 53.0 | 380,296 | 51.1 | 354,081 | 47.6 |
| Stamped and enameled ware: | | | | | | | | | | | | |
| Hourly earnings (cents) | 48.3 | 100.0 | 41.8 | 86.5 | 42.0 | 87.0 | 49.9 | 103.3 | 50.8 | 105.2 | 51.8 | 107.2 |
| Weekly hours | 49.4 | 100.0 | 38.5 | 77.9 | 37.5 | 75.9 | 35.6 | 72.1 | 38.0 | 76.9 | 41.0 | 83.0 |
| Weekly earnings (dollars) | 23.86 | 100.0 | 16.09 | 67.4 | 15.75 | 66.0 | 17.76 | 74.4 | 19.30 | 80.9 | 21.24 | 89.0 |
| Workers employed | 40,000 | 100.0 | 26,400 | 66.0 | 32,302 | 80.8 | 42,360 | 105.9 | 50,014 | 125.0 | 57,129 | 142.8 |
| Man-hours | 1,976,000 | 100.0 | 1,016,400 | 51.4 | 1,211,325 | 61.3 | 1,508,016 | 76.3 | 1,900,532 | 96.2 | 2,341,920 | 118.5 |
| Lumber and allied products: | | | | | | | | | | | | |
| Lumber: Millwork: | | | | | | | | | | | | |
| Hourly earnings (cents) | 49.3 | 100.0 | 41.1 | 83.4 | 39.7 | 80.5 | 45.5 | 92.3 | 44.9 | 91.1 | 46.8 | 94.9 |
| Weekly hours | 47.7 | 100.0 | 34.6 | 72.5 | 36.1 | 75.7 | 34.7 | 72.7 | 38.8 | 81.3 | 43.3 | 90.8 |
| Weekly earnings (dollars) | 23.51 | 100.0 | 14.22 | 60.5 | 14.33 | 60.9 | 15.78 | 67.1 | 17.42 | 74.1 | 20.26 | 86.1 |
| Workers employed | 99,134 | 100.0 | 37,315 | 41.4 | 35,383 | 39.3 | 39,298 | 43.6 | 48,297 | 53.6 | 59,128 | 65.6 |
| Man-hours | 4,299,392 | 100.0 | 1,291,099 | 30.0 | 1,277,507 | 29.7 | 1,363,641 | 31.7 | 1,873,924 | 43.6 | 2,599,242 | 59.5 |
| Lumber: Sawmills: | | | | | | | | | | | | |
| Hourly earnings (cents) | 39.6 | 100.0 | 32.9 | 83.1 | 34.3 | 86.6 | 43.5 | 109.8 | 44.9 | 113.4 | 46.7 | 117.9 |
| Weekly hours | 52.0 | 100.0 | 36.3 | 69.8 | 37.4 | 71.9 | 33.5 | 64.4 | 37.4 | 71.9 | 41.5 | 79.8 |
| Weekly earnings (dollars) | 20.59 | 100.0 | 11.94 | 58.0 | 12.83 | 62.3 | 14.57 | 70.8 | 16.79 | 81.5 | 19.38 | 94.1 |
| Workers employed | 419,084 | 100.0 | 151,289 | 36.1 | 189,367 | 45.2 | 230,945 | 55.1 | 255,230 | 60.9 | 293,778 | 70.1 |
| Man-hours worked | 21,792,368 | 100.0 | 5,491,794 | 25.2 | 7,082,326 | 32.5 | 7,735,652 | 35.5 | 9,545,602 | 43.8 | 12,191,787 | 55.9 |
| Stone, clay, and glass products: | | | | | | | | | | | | |
| Brick, tile, and terra cotta | | | | | | | | | | | | |
| Hourly earnings (cents) | 49.3 | 100.0 | 38.8 | 78.7 | 36.7 | 74.4 | 43.7 | 88.6 | 45.0 | 91.3 | 45.3 | 91.9 |
| Weekly hours | 49.4 | 100.0 | 31.7 | 64.2 | 32.2 | 65.2 | 31.8 | 64.4 | 25.8 | 52.2 | 41.9 | 84.8 |
| Weekly earnings (dollars) | 24.35 | 100.0 | 12.30 | 50.5 | 11.82 | 48.5 | 13.90 | 57.1 | 11.61 | 47.7 | 18.98 | 77.9 |
| Workers employed | 93,657 | 100.0 | 32,593 | 34.8 | 31,944 | 34.1 | 39,242 | 41.9 | 44,583 | 47.6 | 60,783 | 64.9 |
| Man-hours worked | 4,626,656 | 100.0 | 1,033,198 | 22.3 | 1,028,597 | 22.2 | 1,247,890 | 27.0 | 1,150,241 | 24.9 | 2,546,808 | 55.0 |
| Cement: | | | | | | | | | | | | |
| Hourly earnings (cents) | 54.2 | 100.0 | 44.1 | 81.4 | 46.7 | 86.2 | 56.2 | 103.7 | 57.2 | 105.5 | 57.9 | 106.8 |
| Weekly hours | 53.6 | 100.0 | 39.8 | 74.3 | 34.1 | 63.6 | 32.8 | 61.2 | 33.9 | 63.2 | 38.5 | 71.8 |
| Weekly earnings (dollars) | 29.05 | 100.0 | 17.55 | 60.4 | 15.92 | 54.8 | 18.43 | 63.4 | 19.39 | 66.7 | 22.29 | 76.7 |
| Workers employed | 33,368 | 100.0 | 16,918 | 50.7 | 15,829 | 47.4 | 19,854 | 59.5 | 20,698 | 62.0 | 23,601 | 71.0 |
| Man-hours worked | 1,788,525 | 100.0 | 673,336 | 37.6 | 539,769 | 30.2 | 651,211 | 36.4 | 701,662 | 39.2 | 912,104 | 51.0 |
| Glass: | | | | | | | | | | | | |
| Hourly earnings (cents) | 53.9 | 100.0 | 47.8 | 88.7 | 48.2 | 89.4 | 55.7 | 103.3 | 58.4 | 108.3 | 60.9 | 113.0 |
| Weekly hours | 48.2 | 100.0 | 37.3 | 77.4 | 35.9 | 74.5 | 33.8 | 70.1 | 35.4 | 73.4 | 36.8 | 76.3 |
| Weekly earnings (dollars) | 25.98 | 100.0 | 17.83 | 68.6 | 17.30 | 66.6 | 18.83 | 72.5 | 20.67 | 79.6 | 22.41 | 86.3 |
| Workers employed | 67,527 | 100.0 | 41,597 | 61.6 | 49,797 | 73.7 | 63,881 | 94.6 | 67,138 | 99.4 | 68,675 | 101.7 |
| Man-hours worked | 3,254,801 | 100.0 | 1,551,568 | 47.7 | 1,787,712 | 54.9 | 2,159,178 | 66.3 | 2,376,685 | 73.0 | 2,527,240 | 77.6 |

See footnotes at end of table.

TABLE I.—*Hourly earnings, weekly hours, weekly earnings, workers employed, man-hours worked in certain selected industries, 1929, 1932–36*—Continued

| Industry—Classifications | 1929 | | 1932 | | 1933 | | 1934 | | 1935 | | 1936 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Estimated figure | Index | Estimated figure | Index | Estimated figure | Index | Estimated figure | Ind | Estimated figure | Index | Estimated figure | Index |
| Textiles and their products: | | | | | | | | | | | | |
| Carpets and rugs: | | | | | | | | | | | | |
| Hourly earnings (cents) | 52.8 | 100.0 | 45.4 | 86.0 | 45.5 | 86.2 | 55.0 | 104.2 | 56.4 | 106.8 | 56.3 | 106.6 |
| Weekly hours | 47.9 | 100.0 | 31.6 | 66.0 | 36.7 | 76.6 | 31.2 | 65.1 | 36.5 | 76.2 | 36.7 | 76.6 |
| Weekly earnings (dollars) | 25.29 | 100.0 | 14.35 | 56.7 | 16.70 | 66.0 | 17.16 | 67.9 | 20.59 | 81.4 | 20.66 | 81.7 |
| Workers employed | 32,623 | 100.0 | 17,943 | 55.0 | 21,296 | 65.3 | 23,325 | 71.5 | 27,633 | 84.7 | 28,904 | 88.6 |
| Man-hours worked | 1,562,642 | 100.0 | 566,999 | 36.3 | 781,563 | 50.0 | 727,740 | 46.6 | 1,008,604 | 64.5 | 1,060,777 | 67.9 |
| Cotton goods: | | | | | | | | | | | | |
| Hourly earnings (cents) | 30.6 | 100.0 | 23.9 | 78.1 | 27.7 | 90.5 | 37.6 | 122.9 | 37.7 | 123.2 | 36.8 | 120.3 |
| Weekly hours | 51.1 | 100.0 | 44.5 | 87.1 | 41.4 | 81.0 | 33.4 | 65.4 | 34.6 | 67.7 | 37.5 | 73.4 |
| Weekly earnings (dollars) | 15.64 | 100.0 | 10.64 | 68.0 | 11.47 | 73.3 | 12.56 | 80.3 | 13.04 | 83.4 | 13.80 | 88.2 |
| Workers employed | 424,916 | 100.0 | 296,591 | 69.8 | 379,445 | 89.3 | 393,472 | 92.6 | 369,062 | 86.9 | 381,999 | 89.9 |
| Man-hours worked | 21,713,208 | 100.0 | 13,198,300 | 60.8 | 15,709,023 | 72.3 | 13,141,965 | 60.5 | 12,769,545 | 58.8 | 14,324,962 | 66.0 |
| Dyeing and finishing textiles: | | | | | | | | | | | | |
| Hourly earnings (cents) | 52.4 | 100.0 | 41.9 | 80.0 | 42.5 | 81.1 | 52.3 | 99.8 | 53.5 | 102.1 | 51.7 | 98.7 |
| Weekly hours | 47.4 | 100.0 | 44.5 | 93.9 | 42.4 | 89.5 | 34.2 | 72.2 | 35.3 | 74.5 | 38.9 | 82.1 |
| Weekly earnings (dollars) | 24.84 | 100.0 | 18.65 | 75.1 | 18.02 | 72.5 | 17.89 | 72.0 | 18.89 | 76.0 | 20.11 | 81.0 |
| Workers employed | 79,327 | 100.0 | 60,447 | 76.2 | 66,309 | 83.6 | 71,315 | 89.9 | 71,380 | 90.0 | 67,190 | 84.7 |
| Man-hours worked | 3,760,100 | 100.0 | 2,689,892 | 71.5 | 2,811,502 | 74.8 | 2,438,973 | 64.9 | 2,519,714 | 67.0 | 2,613,691 | 69.5 |
| Knit goods: | | | | | | | | | | | | |
| Hourly earnings (cents) | 39.0 | 100.0 | 32.8 | 84.1 | 36.5 | 93.6 | 46.4 | 119.0 | 47.9 | 122.8 | 47.4 | 121.5 |
| Weekly hours | 49.6 | 100.0 | 42.8 | 86.3 | 39.6 | 79.8 | 33.8 | 68.1 | 34.6 | 69.8 | 36.4 | 73.4 |
| Weekly earnings (dollars) | 19.34 | 100.0 | 14.04 | 72.6 | 14.45 | 74.7 | 15.68 | 81.1 | 16.57 | 85.7 | 17.25 | 89.2 |
| Workers employed | 208,488 | 100.0 | 174,296 | 83.6 | 189,698 | 91.0 | 204,944 | 98.3 | 219,776 | 105.4 | 232,464 | 111.5 |
| Man-hours worked | 10,341,005 | 100.0 | 7,459,869 | 72.1 | 7,512,041 | 72.6 | 6,957,107 | 67.0 | 7,604,250 | 73.5 | 8,461,690 | 81.8 |
| Silk and rayon goods: | | | | | | | | | | | | |
| Hourly earnings (cents) | 43.1 | 100.0 | 34.3 | 79.6 | 35.6 | 82.6 | 44.3 | 102.8 | 44.7 | 103.7 | 42.6 | 98.8 |
| Weekly hours | 49.1 | 100.0 | 38.7 | 78.8 | 37.1 | 75.6 | 33.4 | 68.0 | 34.8 | 70.9 | 36.2 | 73.7 |
| Weekly earnings (dollars) | 21.16 | 100.0 | 13.27 | 62.7 | 13.21 | 62.1 | 14.80 | 69.9 | 15.56 | 73.5 | 15.42 | 72.9 |
| Workers employed | 130,467 | 100.0 | 93,023 | 71.3 | 110,322 | 84.6 | 119,899 | 91.9 | 125,908 | 96.5 | 121,073 | 92.8 |
| Man-hours worked | 6,405,930 | 100.0 | 3,599,990 | 56.2 | 4,092,946 | 63.9 | 4,004,627 | 62.5 | 4,381,598 | 68.4 | 4,382,843 | 68.4 |
| Woolen and worsted goods: | | | | | | | | | | | | |
| Hourly earnings (cents) | 46.9 | 100.0 | 38.0 | 81.0 | 39.6 | 84.4 | 49.3 | 105.1 | 49.3 | 105.1 | 50.1 | 106.8 |
| Weekly hours | 47.5 | 100.0 | 42.8 | 90.1 | 41.3 | 86.9 | 33.3 | 70.1 | 36.8 | 77.5 | 36.2 | 76.2 |
| Weekly earnings (dollars) | 22.28 | 100.0 | 16.26 | 73.0 | 16.35 | 73.4 | 16.42 | 73.7 | 18.14 | 81.4 | 18.14 | 81.4 |
| Workers employed | 146,959 | 100.0 | 99,638 | 67.8 | 127,227 | 86.6 | 119,331 | 81.2 | 161,115 | 109.6 | 156,952 | 106.8 |
| Man-hours worked | 6,980,552 | 100.0 | 4,264,506 | 61.1 | 5,254,475 | 75.3 | 3,973,722 | 56.9 | 5,929,032 | 84.9 | 5,681,662 | 81.4 |
| Clothing, men's [6] | | | | | | | | | | | | |
| Hourly earnings (cents) | [5] 71.6 | 100.0 | [5] 50.6 | 70.7 | (9) | ..... | 58.0 | 81.0 | 59.5 | 83.1 | 56.0 | 78.2 |
| Weekly hours | [5] 39.2 | 100.0 | [5] 37.3 | 95.2 | (9) | ..... | 27.8 | 70.9 | 30.4 | 77.6 | 32.2 | 82.1 |
| Weekly earnings (dollars) | 28.07 | 100.0 | 18.87 | 67.2 | ..... | ..... | 16.12 | 57.4 | 18.09 | 64.4 | 18.03 | 64.2 |
| Workers employed | 188,069 | 100.0 | 144,625 | 76.9 | 164,047 | 87.2 | 178,289 | 94.8 | 196,417 | 104.4 | 207,816 | 110.5 |
| Man-hours worked | 7,372,305 | 100.0 | 5,394,512 | 73.2 | ..... | ..... | 4,956,434 | 67.2 | 5,971,077 | 81.0 | 6,691,675 | 90.8 |
| Leather and its manufactures: | | | | | | | | | | | | |
| Boots and shoes: | | | | | | | | | | | | |
| Hourly earnings (cents) | 46.2 | 100.0 | [10] 41.2 | 89.2 | ..... | (9) | (9) | ..... | 51.2 | 110.8 | 49.9 | 108.0 |
| Weekly hours | 46.8 | 100.0 | [10] 40.4 | 86.3 | ..... | (9) | (9) | ..... | 35.5 | 75.9 | 35.6 | 76.1 |
| Weekly earnings (dollars) | 21.62 | 100.0 | 16.64 | 77.0 | ..... | ..... | ..... | ..... | 18.18 | 84.1 | 17.76 | 82.1 |
| Workers employed | 205,640 | 100.0 | 179,729 | 87.4 | 190,914 | 92.8 | 202,144 | 98.3 | 202,113 | 98.3 | 201,938 | 98.2 |
| Man-hours worked | 9,623,952 | 100.0 | 7,261,052 | 75.4 | ..... | ..... | ..... | ..... | 7,175,012 | 74.6 | 7,188,993 | 74.7 |
| Leather: | | | | | | | | | | | | |
| Hourly earnings (cents) | 51.2 | 100.0 | 42.9 | 83.8 | 44.6 | 87.1 | 53.6 | 104.7 | 56.2 | 109.8 | 56.0 | 109.4 |
| Weekly hours | 49.8 | 100.0 | 42.0 | 84.3 | 41.1 | 82.5 | 36.8 | 73.9 | 38.2 | 76.7 | 39.2 | 78.7 |
| Weekly earnings (dollars) | 25.50 | 100.0 | 18.02 | 70.7 | 18.33 | 71.9 | 19.72 | 77.4 | 21.47 | 84.2 | 21.95 | 86.1 |
| Workers employed | 49,932 | 100.0 | 37,699 | 75.5 | 44,191 | 88.5 | 49,083 | 98.3 | 50,877 | 101.9 | 50,831 | 101.8 |
| Man-hours worked | 2,486,614 | 100.0 | 1,583,358 | 63.7 | 1,816,250 | 73.0 | 1,806,254 | 72.6 | 1,943,501 | 78.2 | 1,992,575 | 80.1 |
| Food and kindred products: | | | | | | | | | | | | |
| Confectionery: | | | | | | | | | | | | |
| Hourly earnings (cents) | 38.5 | 100.0 | 35.1 | 91.2 | 36.6 | 95.1 | 41.8 | 108.6 | 43.6 | 113.2 | 41.8 | 108.6 |
| Weekly hours | 48.2 | 100.0 | 41.3 | 85.7 | 37.2 | 77.2 | 36.3 | 75.3 | 36.7 | 76.1 | 39.5 | 82.0 |
| Weekly earnings (dollars) | 18.56 | 100.0 | 14.50 | 78.1 | 13.62 | 73.4 | 15.17 | 81.7 | 16.00 | 86.2 | 16.51 | 89.0 |
| Workers employed | 63,501 | 100.0 | 46,673 | 73.5 | 50,609 | 79.7 | 51,563 | 81.2 | 52,109 | 82.1 | 51,118 | 80.5 |
| Man-hours worked | 3,060,748 | 100.0 | 1,927,595 | 63.0 | 1,882,655 | 61.5 | 1,871,737 | 61.2 | 1,912,400 | 62.5 | 2,019,161 | 66.0 |
| Flour: | | | | | | | | | | | | |
| Hourly earnings (cents) | 52.8 | 100.0 | 45.3 | 85.8 | 46.0 | 87.1 | 53.5 | 101.3 | 54.8 | 103.8 | 53.6 | 101.5 |
| Weekly hours | 51.1 | 100.0 | 47.9 | 93.7 | 43.4 | 84.9 | 38.6 | 75.5 | 39.4 | 77.1 | 43.8 | 85.7 |
| Weekly earnings (dollars) | 26.98 | 100.0 | 21.70 | 80.4 | 19.96 | 74.0 | 20.65 | 76.5 | 21.59 | 80.0 | 23.48 | 87.0 |
| Workers employed | 27,028 | 100.0 | 22,028 | 81.5 | 23,207 | 85.9 | 26,596 | 98.4 | 26,495 | 98.0 | 26,244 | 97.1 |
| Man-hours worked | 1,381,131 | 100.0 | 1,055,141 | 76.4 | 1,007,184 | 72.9 | 1,026,606 | 74.3 | 1,043,903 | 75.6 | 1,149,487 | 83.2 |
| Ice cream: | | | | | | | | | | | | |
| Hourly earnings (cents) | 61.2 | 100.0 | 54.1 | 88.4 | 52.3 | 85.5 | 56.2 | 91.8 | 55.1 | 90.0 | 55.5 | 90.7 |
| Weekly hours | 54.3 | 100.0 | 51.8 | 95.4 | 47.6 | 87.7 | 44.1 | 81.2 | 45.5 | 83.8 | 47.4 | 87.3 |
| Weekly earnings (dollars) | 33.23 | 100.0 | 28.02 | 84.3 | 24.90 | 74.9 | 24.78 | 74.6 | 25.07 | 75.4 | 26.31 | 79.2 |
| Workers employed | 22,399 | 100.0 | 15,075 | 67.3 | 14,367 | 64.1 | 16,844 | 75.2 | 17,308 | 77.3 | 18,166 | 81.1 |
| Man-hours worked | 1,216,266 | 100.0 | 780,885 | 64.2 | 683,809 | 56.2 | 742,820 | 61.1 | 787,514 | 64.7 | 861,068 | 70.8 |
| Slaughtering and meat packing: | | | | | | | | | | | | |
| Hourly earnings (cents) | 53.5 | 100.0 | 46.5 | 86.9 | 46.2 | 86.4 | 53.5 | 100.0 | 56.0 | 104.7 | 56.5 | 105.6 |
| Weekly hours | 48.9 | 100.0 | 46.3 | 94.7 | 43.3 | 88.5 | 40.8 | 83.4 | 40.3 | 82.4 | 42.2 | 86.3 |
| Weekly earnings (dollars) | 26.16 | 100.0 | 21.53 | 82.3 | 20.00 | 76.5 | 21.83 | 83.4 | 22.57 | 86.3 | 23.84 | 91.1 |
| Workers employed | 122,505 | 100.0 | 102,169 | 83.4 | 113,193 | 92.4 | 140,023 | 114.3 | 116,620 | 95.2 | 127,773 | 104.3 |
| Man-hours worked | 5,990,494 | 100.0 | 4,730,425 | 79.0 | 4,901,257 | 81.8 | 5,712,938 | 95.4 | 4,699,786 | 78.5 | 5,392,021 | 90.0 |
| Tobacco manufactures: | | | | | | | | | | | | |
| Chewing, smoking, and snuff: | | | | | | | | | | | | |
| Hourly earnings (cents) | [11] 39.5 | 100.0 | 32.1 | 81.3 | 34.2 | 86.6 | 39.0 | 98.7 | 43.2 | 109.4 | 44.4 | 112.4 |
| Weekly hours | 48.3 | 100.0 | 42.4 | 87.8 | 38.8 | 80.3 | 34.5 | 71.4 | 34.9 | 72.3 | 35.7 | 73.9 |
| Weekly earnings (dollars) | 19.08 | 100.0 | 13.61 | 71.3 | 13.27 | 69.5 | 13.46 | 70.5 | 15.08 | 79.0 | 15.85 | 83.1 |
| Workers employed | 10,811 | 100.0 | 11,287 | 104.4 | 10,223 | 94.6 | 10,746 | 99.4 | 10,077 | 93.2 | 10,152 | 93.9 |
| Man-hours worked | 522,171 | 100.0 | 478,569 | 91.6 | 396,652 | 76.0 | 370,737 | 71.0 | 351,687 | 67.4 | 362,426 | 69.4 |
| Cigars and cigarettes: | | | | | | | | | | | | |
| Hourly earnings (cents) | 35.6 | 100.0 | 31.7 | 89.0 | 32.3 | 90.7 | 36.7 | 103.1 | 39.5 | 111.0 | 40.5 | 113.8 |
| Weekly hours | 47.0 | 100.0 | 39.2 | 83.4 | 38.4 | 81.7 | 35.4 | 75.3 | 35.0 | 74.5 | 35.7 | 76.0 |
| Weekly earnings (dollars) | 16.73 | 100.0 | 12.43 | 74.3 | 12.40 | 74.1 | 12.99 | 77.6 | 13.82 | 82.7 | 14.46 | 86.4 |
| Workers employed | 105,308 | 100.0 | 79,508 | 75.5 | 77,102 | 73.2 | 83,825 | 79.6 | 80,466 | 76.4 | 82,983 | 78.8 |
| Man-hours worked | 4,949,476 | 100.0 | 3,116,714 | 63.0 | 2,960,717 | 59.8 | 2,967,405 | 60.0 | 2,816,310 | 56.9 | 2,962,493 | 59.9 |

See footnotes at end of table.

TABLE I.—*Hourly earnings, weekly hours, weekly earnings, workers employed, man-hours worked in certain selected industries, 1929, 1932–36*—Continued

| Industry Classifications | 1929 | | 1932 | | 1933 | | 1934 | | 1935 | | 1936 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Estimated figure | Index | Estimated figure | Index | Estimated figure | Index | Estimated figure | Index | Estimated figure | Index | Estimated figure | Index |
| Paper and printing: | | | | | | | | | | | | |
| Boxes, paper: | | | | | | | | | | | | |
| Hourly earnings (cents) | 47.3 | 100.0 | 44.4 | 93.9 | 43.5 | 92.0 | 39.6 | 104.9 | 40.7 | 105.1 | 48.1 | 101.7 |
| Weekly hours | 48.8 | 100.0 | 41.5 | 85.0 | 39.4 | 80.7 | 36.6 | 75.0 | 38.1 | 78.1 | 40.9 | 83.8 |
| Weekly earnings (dollars) | 23.08 | 100.0 | 18.43 | 79.9 | 17.14 | 74.3 | 18.15 | 78.6 | 18.94 | 82.1 | 19.67 | 85.2 |
| Workers employed | 55,654 | 100.0 | 41,796 | 75.1 | 47,220 | 84.8 | 53,094 | 97.4 | 55,276 | 99.3 | 58,047 | 104.3 |
| Man-hours worked | 2,715,915 | 100.0 | 1,734,534 | 63.9 | 1,860,468 | 68.5 | 1,943,240 | 71.6 | 2,106,016 | 77.5 | 2,374,122 | 87.4 |
| Paper and pulp: | | | | | | | | | | | | |
| Hourly earnings (cents) | 56.1 | 100.0 | 45.2 | 80.6 | 44.3 | 79.0 | 51.5 | 91.8 | 52.9 | 94.3 | 53.7 | 95.7 |
| Weekly hours | 48.9 | 100.0 | 41.2 | 84.3 | 40.6 | 83.0 | 36.1 | 74.1 | 38.9 | 79.6 | 41.6 | 85.1 |
| Weekly earnings (dollars) | 27.43 | 100.0 | 18.62 | 67.9 | 17.99 | 65.6 | 18.75 | 68.4 | 20.58 | 75.0 | 22.34 | 81.4 |
| Workers employed | 128,049 | 100.0 | 98,854 | 77.2 | 107,208 | 83.8 | 123,823 | 96.7 | 126,971 | 99.2 | 127,665 | 99.7 |
| Man-hours worked | 6,261,596 | 100.0 | 4,072,785 | 65.0 | 4,356,299 | 69.6 | 4,507,157 | 72.0 | 4,939,172 | 78.9 | 5,310,864 | 84.8 |
| Printing and publishing: newspaper and periodical: | | | | | | | | | | | | |
| Hourly earnings (cents) | 84.7 | 100.0 | 77.6 | 91.6 | 76.5 | 90.3 | 84.5 | 99.8 | 89.2 | 105.3 | 92.2 | 108.9 |
| Weekly hours | 47.5 | 100.0 | 42.6 | 89.7 | 39.6 | 83.4 | 37.3 | 78.5 | 36.9 | 77.7 | 37.0 | 77.9 |
| Weekly earnings (dollars) | 40.23 | 100.0 | 33.06 | 82.2 | 30.29 | 75.3 | 31.52 | 78.3 | 32.92 | 81.8 | 34.11 | 84.8 |
| Workers employed | 129,660 | 100.0 | 108,525 | 83.7 | 109,087 | 84.1 | 116,564 | 89.9 | 118,684 | 91.5 | 124,474 | 96.0 |
| Man-hours worked | 6,158,850 | 100.0 | 4,623,165 | 75.1 | 4,319,845 | 70.1 | 4,347,837 | 70.6 | 4,379,440 | 71.1 | 4,605,538 | 74.8 |
| Chemicals and allied products, and petroleum refining: | | | | | | | | | | | | |
| Chemicals: | | | | | | | | | | | | |
| Hourly earnings (cents) | [1] 54.6 | 100.0 | 54.5 | 99.8 | 56.6 | 103.7 | 61.6 | 112.8 | 63.6 | 116.5 | 65.3 | 119.6 |
| Weekly hours | [1] 51.6 | 100.0 | 42.4 | 82.2 | 41.0 | 79.5 | 38.6 | 74.8 | 39.7 | 76.9 | 40.6 | 78.7 |
| Weekly earnings (dollars) | 28.17 | 100.0 | 23.11 | 82.0 | 23.21 | 82.4 | 23.78 | 84.4 | 25.25 | 89.6 | 26.51 | 94.1 |
| Workers employed | 62,199 | 100.0 | 43,291 | 69.6 | 53,190 | 85.5 | 65,931 | 106.0 | 65,858 | 105.9 | 70,782 | 113.8 |
| Man-hours worked | 3,209,168 | 100.0 | 1,835,538 | 57.2 | 2,180,790 | 67.9 | 2,544,937 | 79.3 | 2,613,769 | 81.4 | 2,873,749 | 89.5 |
| Fertilizers: | | | | | | | | | | | | |
| Hourly earnings (cents) | 36.0 | 100.0 | 30.8 | 85.6 | 27.8 | 77.2 | 36.3 | 100.8 | 35.4 | 98.3 | 35.9 | 99.7 |
| Weekly hours | 53.2 | 100.0 | 42.3 | 79.5 | 41.1 | 77.3 | 33.5 | 63.0 | 34.1 | 64.1 | 39.5 | 74.2 |
| Weekly earnings (dollars) | 19.15 | 100.0 | 13.03 | 68.0 | 11.43 | 59.7 | 12.16 | 63.5 | 12.07 | 63.0 | 14.18 | 74.0 |
| Workers employed | 20,926 | 100.0 | 10,421 | 49.8 | 13,063 | 62.4 | 17,062 | 81.4 | 17,473 | 83.5 | 16,762 | 80.1 |
| Man-hours worked | 1,113,263 | 100.0 | 440,808 | 39.6 | 536,889 | 48.2 | 591,677 | 53.1 | 595,829 | 53.5 | 662,099 | 59.5 |
| Petroleum refining: | | | | | | | | | | | | |
| Hourly earnings (cents) | 64.7 | 100.0 | 63.2 | 97.7 | 65.5 | 101.2 | 75.0 | 115.9 | 80.1 | 123.8 | 82.7 | 127.8 |
| Weekly hours | 51.3 | 100.0 | 42.2 | 82.3 | 37.9 | 73.9 | 31.9 | 68.0 | 35.0 | 68.2 | 35.8 | 69.8 |
| Weekly earnings (dollars) | 33.19 | 100.0 | 26.67 | 80.4 | 24.82 | 74.8 | 26.18 | 78.9 | 28.04 | 84.5 | 29.61 | 89.2 |
| Workers employed | 80,596 | 100.0 | 63,913 | 79.3 | 69,047 | 85.7 | 77,533 | 96.2 | 77,402 | 96.0 | 79,226 | 98.3 |
| Man-hours worked | 4,131,575 | 100.0 | 2,697,129 | 65.2 | 2,616,881 | 63.3 | 2,705,902 | 65.4 | 2,709,079 | 65.5 | 2,836,291 | 68.6 |
| Rayon and allied products: | | | | | | | | | | | | |
| Hourly earnings (cents) | 42.1 | 100.0 | 39.8 | 94.5 | 42.3 | 100.5 | 50.3 | 119.5 | 51.4 | 122.1 | 53.2 | 126.4 |
| Weekly hours | 49.2 | 100.0 | 43.5 | 88.4 | 41.2 | 83.7 | 37.0 | 75.2 | 37.9 | 77.0 | 38.6 | 78.5 |
| Weekly earnings (dollars) | 20.71 | 100.0 | 17.31 | 83.6 | 17.43 | 84.2 | 18.61 | 89.9 | 19.48 | 94.1 | 20.54 | 99.2 |
| Workers employed | 39,106 | 100.0 | 34,296 | 87.7 | 44,306 | 113.3 | 46,888 | 119.9 | 50,550 | 129.3 | 50,564 | 129.3 |
| Man-hours worked | 1,924,015 | 100.0 | 1,491,876 | 77.5 | 1,825,407 | 94.9 | 1,734,856 | 90.2 | 1,915,845 | 99.6 | 1,951,770 | 101.4 |
| Rubber products: | | | | | | | | | | | | |
| Rubber tires and inner tubes: | | | | | | | | | | | | |
| Hourly earnings (cents) | 67.3 | 100.0 | 62.5 | 92.9 | 64.2 | 95.4 | 77.9 | 115.8 | 84.2 | 125.1 | 87.3 | 129.7 |
| Weekly hours | 44.5 | 100.0 | 32.5 | 73.0 | 31.6 | 71.0 | 30.7 | 69.0 | 32.3 | 72.6 | 35.4 | 79.6 |
| Weekly earnings (dollars) | 29.95 | 100.0 | 20.31 | 67.8 | 20.29 | 67.7 | 23.92 | 79.9 | 27.20 | 90.8 | 30.90 | 103.2 |
| Workers employed | 83,263 | 100.0 | 45,295 | 54.4 | 52,976 | 63.6 | 60,199 | 72.3 | 57,128 | 68.6 | 58,700 | 70.5 |
| Man-hours worked | 3,705,204 | 100.0 | 1,472,088 | 39.7 | 1,674,042 | 45.2 | 1,848,109 | 49.9 | 1,845,234 | 49.8 | 2,077,080 | 56.1 |

[1] As of 1929, 1931, 1933 census classifications and carried forward for later years on a comparable basis.

[2] Phonographs only.

[3] Radios only for March to December.

[4] Wages and Hours in the Motor Vehicle Industry, 1932, *Monthly Labor Review*, June 1933, p. 1371.

[5] Compiled from data reported by the Silverware Manufacturers Institute to NRA, Division of Research and Planning, reproduced in *Wages and Hours in American Industry*, NRA Source Material in 3 volumes, by Solomon Barkin and Anne Page, Labor Studies Section, Vol. III, p. 1117, Division of Review, Washington, D. C., 1936.

[6] Includes clothing (except work), men's and clothing, work, men's on the census basis for 1929 and 1931, and carried forward for later years on a comparable basis.

[7] *Wages and Hours in the Men's Clothing Industry, 1928, Bulletin 503*, U. S. Bureau of Labor Statistics, p. 48; Ibid. 1930, Bulletin 557, p. 49.

[8] *Wages and Hours of Labor in the Men's Clothing Industry 1932, Bulletin 591*, U. S. Bureau of Labor Statistics, p. 59.

[9] Not available.

[10] *Wages and Hours in the Boot and Shoe Industry, 1910–1932, Bulletin 579*, U. S. Bureau of Labor Statistics, p. 78.

[11] *Cigarette, Snuff, Chewing, and Smoking Tobacco Manufacturing Industry*, by Donald Yakeley, p. 53; mss. Miscellaneous NRA files 1934, p. 65. This source was used because it appeared to be more reliable than the figure derived from the procedure generally followed. The figure derived from that procedure was 33.7 cents. This was less than the hourly earnings in cigars and cigarettes, and the relationship generally is the other way around.

[12] The NRA results based on data supplied by Chemical Alliance, Inc., involving 36,237 workers in 1929 and 23,597 in 1932 gave 55.1 cents for 1929 and 52.3 cents for 1932 and 51.3 hours for 1929 and 41.0 hours for 1932. *Wages and Hours in American Industry*, NRA Source Material in 3 volumes, by Solomon Barkin and Anne Page, Labor Studies Section, Vol. I, pp. 213, 218, Division of Review, Washington, D. C., 1936.

TABLE I–A.—*Hourly earnings for 1929 according to this study (Table I) and according to the Census*

| INDUSTRY—CLASSIFICATIONS | Hourly earnings according to this study (cents) | Hourly earnings according to the Census | Ratio of Census hourly earnings to hourly earnings of this study (percent) |
|---|---|---|---|
| Iron and steel and their products, not including machinery: | | | |
| Blast furnaces, steel works, and rolling mills | 65.5 | 68.2 | 104.1 |
| Cast-iron pipe | 54.2 | 51.0 | 94.1 |
| Hardware | 52.9 | 50.8 | 96.0 |
| Steam and hot-water heating apparatus and steam fittings | 62.8 | 61.6 | 98.1 |
| Stoves | 62.1 | 59.3 | 95.5 |
| Structural and ornamental work | 59.2 | 60.2 | 101.7 |
| Machinery, not including transportation equipment: | | | |
| Agricultural implements | 59.2 | 54.2 | 91.6 |
| Electrical machinery, apparatus, and supplies | 63.7 | 56.6 | 88.9 |
| Foundry and machine-shop products | 63.5 | 60.7 | 95.6 |
| Machine tools | 64.1 | 60.4 | 94.2 |
| Radios and phonographs | 48.2 | 50.9 | 105.6 |
| Transportation equipment: | | | |
| Automobiles | 69.1 | 66.3 | 95.9 |
| Shipbuilding | 64.6 | 66.3 | 102.6 |
| Nonferrous metals and their products: | | | |
| Brass, bronze, and copper products | 56.9 | 56.7 | 99.6 |
| Silverware and plated ware | 61.5 | 58.3 | 94.8 |
| Stamped and enameled ware | 48.3 | 48.8 | 101.0 |
| Lumber and allied products: | | | |
| Lumber: millwork | 49.3 | 52.1 | 105.7 |
| Lumber: sawmills | 39.6 | 37.2 | 93.9 |
| Stone, clay, and glass products: | | | |
| Brick, tile and terra cotta | 49.3 | 44.6 | 90.5 |
| Cement | 54.2 | 52.5 | 96.9 |
| Glass | 53.9 | 51.9 | 96.3 |
| Textiles and their products: | | | |
| Carpets and rugs | 52.8 | 49.2 | 93.2 |
| Cotton goods | 30.6 | 28.7 | 93.8 |
| Dyeing and finishing | 52.4 | 48.2 | 92.0 |
| Knit goods | 39.0 | 39.2 | 100.5 |
| Silk and rayon goods | 43.1 | 41.3 | 95.8 |
| Woolen and worsted goods | 46.9 | 45.2 | 96.4 |
| Clothing, men's | 71.6 | 53.8 | 75.1 |
| Leather and its manufactures: | | | |
| Boots and shoes | 46.2 | 44.4 | 96.1 |
| Leather | 51.2 | 49.0 | 95.7 |
| Food and kindred products: | | | |
| Confectionery | 38.5 | 35.5 | 92.2 |
| Flour | 52.8 | 48.8 | 92.4 |
| Ice cream | 61.2 | 53.4 | 87.3 |
| Slaughtering and meat packing | 53.5 | 53.2 | 99.4 |
| Tobacco manufactures: | | | |
| Chewing, smoking, and snuff | 39.5 | 33.0 | 83.5 |
| Cigars and cigarettes | 35.6 | 33.3 | 93.5 |
| Paper and printing: | | | |
| Boxes, paper | 47.3 | 40.4 | 85.4 |
| Paper and pulp | 56.1 | 53.2 | 94.8 |
| Printing and publishing—newspaper and periodical | 84.7 | 79.1 | 93.4 |
| Chemicals and allied products, and petroleum refining: | | | |
| Chemicals | 54.6 | 56.7 | 103.8 |
| Fertilizers | 36.0 | 30.9 | 85.8 |
| Petroleum refining | 64.7 | 61.0 | 94.3 |
| Rayon and allied products | 42.1 | 44.7 | 106.2 |
| Rubber products: | | | |
| Rubber tires and inner tubes | 67.3 | 66.0 | 98.1 |

Source: Table I and *U. S. Census of Manufactures, 1929.*

TABLE I–B.—*Classification of industries by durability of product and degree of concentration—1935* [1]

DURABLE GOODS INDUSTRIES

| | |
|---|---|
| More than 30 percent of all workers in employ of 4 largest enterprises: | |
| Automobiles | 72.4 |
| Agricultural implements | 70.0 |
| Silver and plated ware | 50.4 |
| Blast furnaces, steel works, and rolling mills | 46.5 |
| Ship building | 45.2 |
| Steam and hot water heating apparatus | 41.1 |
| Electrical machinery, apparatus, and supplies | 39.7 |
| Radios and phonographs | 37.6 |
| Brass, bronze, and copper products | 37.4 |
| Glass | 37.1 |
| Cast-iron pipe | 35.7 |
| Hardware | 34.4 |
| Cement | 30.7 |
| Less than 30 percent of all workers in employ of 4 largest enterprises: | |
| Structural and ornamental work | 24.8 |
| Brick, tile, and terra cotta | 14.7 |
| Machine tools | 14.1 |
| Stoves | 13.9 |
| Foundry and machine shop products | 13.9 |
| Stamped and enameled ware | 9.3 |
| Lumber: | |
| Millwork | 5.1 |
| Sawmills | 3.9 |

SEMIDURABLE AND NONDURABLE GOODS INDUSTRIES

| | |
|---|---|
| More than 30 percent of all workers in employ of 4 largest enterprises: | |
| Rubber tires | 79.4 |
| Rayon and allied products | 74.8 |
| Carpets and rugs | 57.9 |
| Chewing and smoking tobacco and snuff | 51.9 |
| Slaughtering and meat packing | 38.7 |
| Petroleum refining | 38.2 |
| Cigars and cigarettes | 37.0 |
| Chemicals | 34.9 |
| Fertilizers | 31.3 |
| Less than 30 percent of all workers in employ of 4 largest enterprises: | |
| Ice cream | 26.6 |
| Woolen and worsted goods | 22.4 |
| Boots and shoes | 21.0 |
| Flour | 19.5 |
| Leather | 18.9 |
| Dyeing and finishing, textiles | 15.8 |
| Paper and pulp | 14.9 |
| Newspaper printing and publishing | 14.1 |
| Silk and rayon goods | 11.0 |
| Confectionery | 9.8 |
| Cotton goods | 9.2 |
| Paper boxes | 8.8 |
| Men's clothing | 6.4 |
| Knit goods | 5.3 |

[1] Based on appendix 7, table I

*Table II. Employment, hourly earnings, and hours worked in manufacturing industries 1929, 1932, and 1936, by durability of product and degree of concentration*

| Industries | 1929 | | | 1932 | | | 1936 | | |
|---|---|---|---|---|---|---|---|---|---|
| | Number employed | Hourly earnings (cents) | Man-hours worked | Number employed | Hourly earnings (cents) | Man-hours worked | Number employed | Hourly earnings (cents) | Man-hours worked |
| **DURABLE CONCENTRATED** | | | | | | | | | |
| Total | 1,614,353 | 59.0 | 78,002,746 | 852,430 | 52.0 | 26,301,469 | 1,415,161 | 64.4 | 55,909,886 |
| Blast furnaces | 419,534 | 67.5 | 20,509,419 | 234,939 | 52.7 | 6,131,908 | 436,315 | 67.1 | 17,845,284 |
| Cast-iron pipe | 19,741 | 54.2 | 850,847 | 10,404 | 44.4 | 338,130 | 16,879 | 49.3 | 641,778 |
| Hardware | 52,306 | 52.9 | 2,562,994 | 30,285 | 50.6 | 950,949 | 45,454 | 55.8 | 1,841,796 |
| Steam and hot-water apparatus | 39,621 | 62.8 | 1,842,376 | 20,484 | 54.3 | 628,850 | 34,906 | 59.1 | 1,445,108 |
| Agricultural implements | 41,663 | 59.2 | 2,091,483 | 10,374 | 48.4 | 329,893 | 28,914 | 61.0 | 1,147,886 |
| Electrical machinery | 277,942 | 63.7 | 13,285,628 | 132,300 | 59.3 | 4,088,070 | 190,840 | 62.4 | 7,973,636 |
| Radios and phonographs | 65,196 | 48.2 | 3,155,486 | 25,622 | 46.8 | 935,203 | 49,549 | 54.0 | 1,848,178 |
| Automobiles | 447,448 | 69.1 | 21,208,525 | 243,412 | 62.8 | 7,764,843 | 371,829 | 77.0 | 14,315,416 |
| Shipbuilding | 55,089 | 64.6 | 2,561,638 | 36,249 | 63.5 | 1,240,966 | 58,349 | 76.2 | 2,086,629 |
| Brass, bronze, etc | 79,183 | 56.9 | 3,967,068 | 40,700 | 50.7 | 1,326,820 | 71,581 | 59.5 | 2,977,770 |
| Silverware | 15,735 | 61.5 | 744,266 | 9,126 | 51.1 | 334,924 | 9,079 | 58.4 | 354,081 |
| Cement | 33,368 | 54.2 | 1,788,525 | 16,918 | 44.1 | 673,336 | 23,691 | 57.9 | 912,104 |
| Glass | 67,527 | 53.9 | 3,254,801 | 41,597 | 47.8 | 1,551,508 | 68,675 | 60.9 | 2,527,240 |
| **DURABLE NOT CONCENTRATED** | | | | | | | | | |
| Total | 1,246,270 | 54.4 | 62,425,309 | 518,514 | 46.8 | 17,100,867 | 968,812 | 53.9 | 40,780,929 |
| Stoves | 46,616 | 62.1 | 2,111,705 | 25,825 | 49.8 | 830,642 | 45,078 | 58.2 | 1,870,753 |
| Structural work | 54,947 | 50.2 | 2,802,297 | 24,561 | 54.3 | 780,864 | 34,762 | 58.4 | 1,441,235 |
| Foundry and machine shops | 454,411 | 63.5 | 22,087,883 | 208,588 | 55.1 | 6,257,640 | 381,730 | 60.1 | 16,185,352 |
| Machine tools | 47,391 | 64.1 | 2,431,158 | 11,943 | 60.4 | 370,233 | 36,633 | 63.6 | 1,633,832 |
| Stamped and enamelware | 40,000 | 48.3 | 1,976,000 | 26,400 | 41.8 | 1,016,400 | 57,120 | 51.8 | 2,341,920 |
| Lumber: Millwork | 90,134 | 49.3 | 4,299,392 | 37,315 | 41.1 | 1,291,099 | 59,128 | 46.8 | 2,560,242 |
| Lumber: Sawmills | 419,084 | 49.6 | 21,792,368 | 154,289 | 32.9 | 5,491,701 | 293,778 | 46.7 | 12,191,787 |
| Brick, tile, and terra cotta | 93,657 | 49.3 | 4,626,656 | 32,593 | 38.8 | 1,033,198 | 60,783 | 45.3 | 2,546,808 |
| **SEMI- AND NON-DURABLE CONCENTRATED** | | | | | | | | | |
| Total | 557,337 | 49.6 | 27,111,708 | 408,423 | 45.2 | 16,830,146 | 525,846 | 58.0 | 20,179,606 |
| Carpets | 32,623 | 52.8 | 1,562,642 | 17,943 | 45.4 | 566,999 | 28,904 | 59.3 | 1,060,777 |
| Meat packing | 122,505 | 53.5 | 5,990,494 | 102,169 | 46.5 | 4,730,425 | 127,773 | 56.5 | 5,392,021 |
| Chewing tobacco | 19,811 | 39.5 | 522,171 | 11,287 | 32.1 | 478,569 | 10,152 | 44.4 | 362,426 |
| Cigars and cigarettes | 105,308 | 35.6 | 4,949,176 | 79,508 | 31.7 | 3,116,714 | 82,983 | 40.5 | 2,962,493 |
| Chemicals | 62,190 | 54.6 | 3,209,468 | 43,291 | 54.5 | 1,835,538 | 70,782 | 65.3 | 2,873,749 |
| Fertilizers | 20,926 | 36.0 | 1,113,263 | 10,421 | 30.8 | 440,808 | 16,762 | 35.9 | 662,089 |
| Petroleum refining | 80,596 | 64.7 | 4,134,575 | 63,913 | 63.2 | 2,697,129 | 79,226 | 82.7 | 2,836,291 |
| Rayon and allied products | 36,106 | 42.1 | 1,924,015 | 34,296 | 39.8 | 1,491,876 | 50,564 | 53.2 | 1,951,770 |
| Rubber tires | 83,263 | 67.3 | 3,705,204 | 45,296 | 62.5 | 1,472,088 | 58,700 | 87.3 | 2,077,980 |
| **SEMI- AND NON-DURABLE NOT CONCENTRATED** | | | | | | | | | |
| Total | 1,860,089 | 51.5 | 89,478,172 | 1,418,999 | 43.4 | 59,045,784 | 1,825,977 | 52.5 | 67,658,331 |
| Cotton goods | 424,916 | 30.6 | 21,713,208 | 296,501 | 23.9 | 14,198,300 | 381,999 | 36.8 | 14,324,962 |
| Dyeing and finishing | 79,327 | 52.4 | 3,760,100 | 60,447 | 41.9 | 2,689,892 | 67,190 | 51.7 | 2,613,691 |
| Knit goods | 208,488 | 39.0 | 10,341,005 | 174,296 | 32.8 | 7,459,860 | 232,464 | 47.4 | 8,461,690 |
| Silk and rayon products | 130,467 | 43.1 | 6,405,930 | 93,023 | 34.3 | 3,599,990 | 121,073 | 42.6 | 4,382,843 |
| Woolen and worsted products | 146,959 | 46.9 | 6,980,552 | 99,638 | 38.0 | 4,264,506 | 156,952 | 50.1 | 5,681,662 |
| Men's clothing | 188,069 | 71.6 | 7,372,305 | 144,625 | 50.6 | 5,394,512 | 207,816 | 56.0 | 6,691,675 |
| Boots and shoes | 205,640 | 46.2 | 9,623,952 | 179,729 | 41.2 | 7,261,052 | 201,938 | 49.9 | 7,188,993 |
| Leather | 49,932 | 54.2 | 2,486,614 | 37,699 | 42.9 | 1,583,358 | 50,831 | 56.0 | 1,992,575 |
| Confectionery | 63,501 | 38.5 | 3,060,748 | 46,673 | 35.1 | 1,927,595 | 51,118 | 41.8 | 2,019,164 |
| Flour | 27,028 | 52.8 | 1,384,131 | 22,028 | 45.3 | 1,055,141 | 26,244 | 53.6 | 1,149,487 |
| Ice cream | 22,399 | 61.2 | 1,216,266 | 15,075 | 54.1 | 780,885 | 18,166 | 55.5 | 861,068 |
| Paper boxes | 57,654 | 47.3 | 2,715,915 | 41,796 | 44.4 | 1,734,534 | 58,047 | 48.1 | 2,374,122 |
| Paper and pulp | 128,049 | 56.1 | 6,261,596 | 98,854 | 45.2 | 4,072,785 | 127,665 | 53.7 | 5,310,864 |
| Printing and publishing—newspapers | 129,660 | 84.7 | 6,158,850 | 108,525 | 77.6 | 4,623,165 | 124,474 | 92.2 | 4,605,538 |

Source: Tables I and I-B.

TABLE II-A.—*Index of employment, hourly earnings, and hours worked in manufacturing industries, 1929, 1932, and 1936, by durability of product and degree of concentration*

| | 1929 | | | 1932 | | | 1936 | | |
|---|---|---|---|---|---|---|---|---|---|
| | Number employed | Hourly earnings | Man-hours worked | Number employed | Hourly earnings | Man-hours worked | Number employed | Hourly earnings | Man-hours worked |
| Durable concentrated | 100.0 | 100.0 | 100.0 | 52.8 | 88.1 | 33.7 | 87.7 | 104.1 | 71.7 |
| Durable not concentrated | 100.0 | 100.0 | 100.0 | 41.6 | 86.0 | 27.5 | 77.7 | 99.1 | 65.6 |
| Total durable | 100.0 | 100.0 | 100.0 | 47.9 | 87.4 | 31.0 | 83.3 | 102.3 | 69.0 |
| Semi- and non-durable concentrated | 100.0 | 100.0 | 100.0 | 73.2 | 91.1 | 62.1 | 94.3 | 146.9 | 74.4 |
| Semi- and non-durable not concentrated | 100.0 | 100.0 | 100.0 | 76.3 | 84.3 | 66.7 | 98.2 | 101.9 | 75.6 |
| Total semi- and non-durable | 100.0 | 100.0 | 100.0 | 75.6 | 86.8 | 65.6 | 97.3 | 107.7 | 75.3 |
| All industries | 100.0 | 100.0 | 100.0 | 60.6 | 87.0 | 46.7 | 89.7 | 104.8 | 71.9 |

# APPENDIX 7.—DATA ON LARGEST FOUR AND LARGEST EIGHT PRODUCERS IN EACH MANUFACTURING INDUSTRY, 1935 [1]

This Appendix presents the results of a study of unpublished Census compilations made available through the courtesy of the Bureau of the Census. The National Resources Committee assumes full responsibility for the accuracy of the statistics presented in this study, and the Bureau of the Census assumes responsibility for the presentation of the figures in such a manner as to avoid disclosing, even approximately, any information pertaining to an individual company or concern.

In order to measure concentration within each of the Census industries, the reports of all establishments in each industry under a common ownership were combined, and treated as those of a single producer. Information is shown for the four and eight most important producers in each of 275 Census industry classifications.

Special tabulations were prepared from the 1935 Census of Manufactures data, ranking all the producers within each industry according to three criteria, namely, value of products, total persons employed (wage earners plus salaried employees) and "value added by manufacture" within the industry. In the tables presented, industries are grouped according to size based on total number of persons employed. Those employing 100,000 or more persons in 1935 appear in the first section of the tables, those employing between 25,000 and 100,000 are shown in the second section of the tables, and those employing less than 25,000 persons appear in the third section. Within each of these groups on table I, industries are arranged according to the proportion of the total persons employed in each industry by the four producers employing the greatest number of persons in the industry. In table II industries are arranged according to the proportion of the value of product of each industry contributed by the largest four producers in the industry. In many of the industries, the ranking of the eight largest producers by value of products and by "value added by manufacture" was the same. Table III shows only those industries in which the largest four or the largest eight producers ranked according to "value added by manufacture" differed from those in the table showing producers ranked according to value of products.

Six small industries were so concentrated that the data for the largest four and the largest eight producers could not be shown without approximate disclosure of information held confidential by the Bureau of the Census. These industries are listed separately in table III.

In certain industries, particularly the textile industries, the practice by some manufacturers of letting out work on a contract basis to independent contract shops occasions slight distortion in the relationship between total persons employed and number of wage earners and the value of product, cost of materials, and "value added by manufacture."

In each table data are shown indicating the activity of the largest four and the largest eight producers as reflected in the following items along with the percent which these constitute of the total industry.

1. Number of persons employed (salaried employees and average number of wage earners).
2. Wages and salaries.
3. Wage earners.
4. Wages.
5. Value of product.
6. Cost of materials, containers, fuel, and purchased electric energy.
7. Value added by manufacture.

In these tables, the Census Bureau definition of terms is employed. Where noncensus terms are used in the tables the exact meaning is given in the general description of terms below:

1. *Number of persons employed.*—The figures for the number of "persons employed" as used in this report is the sum of the number of salaried employees as of December 15, and the average number of wage earners for the year. These figures do not include data for persons employed in central administrative offices or proprietors and firm members.

2. *Number of wage earners.*—The figures for the number of wage earners is the quotient of the total man-months reported to the Bureau of the Census, divided by 12, resulting in an average for the year.

3. *Wages.*—The figures shown for this item represent the total amount paid to wage earners during the year.

4. *Value of product.*—The amounts under this heading are the values, at the factory or plant, of all commodities produced (or, for some industries, receipts for work done) during the census year, whether sold, transferred to other plants, or held in stock.

5. *Cost of materials, etc.*—The amounts under this heading include the following census categories: materials, mill and shop supplies and containers, fuel, and purchased electric energy used during the period covered.

6. *Value added by manufacture.*—This figure is calculated by subtracting the cost of materials, supplies, containers, fuel, and purchased electric energy from the value of products.

[1] Appendix 7 was prepared by Grace W. Knott, assisted by Ruth Rosenwald.

7. *Establishment.*—The term "establishment" is used here with the same meaning as that adopted by the Census Bureau. As a rule it signifies a single plant or factory. In a few cases it refers to two or more plants operated under a common ownership and located in the same city, or in the same county but in

TABLE I.—*Concentration in manufacturing ind*

[Values in thous

| Industry number | Industry | Largest four producers | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Persons employed | | Wages and salaries | | Wage earners | | Wages | | Value of product | | Cost of materials, etc.[1] | | Value added by manufacture [2] | | Number of establishments | |
| | | Number | Percent of industry | Amount | Percent of industry | Number | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Number | Percent of industry |
| | | 21 LARGE INDUSTRIES * | | | | | | | | | | | | | | | |
| 1408 | Motor vehicles, not including motorcycles | 118, 557 | 72. 4 | 186, 303 | 74 7 | 108, 793 | 74 0 | 167, 622 | 77. 2 | 2, 080, 334 | 87 0 | 1, 594, 924 | 88. 0 | 485, 410 | 84 3 | 40 | 33. 0 |
| 1407 | Motor-vehicle bodies and motor-vehicle parts. | 161, 924 | 62. 0 | 241, 401 | 64. 9 | 152, 881 | 63. 5 | 223, 579 | 68. 1 | 1, 076, 150 | 69 4 | 733, 285 | 73. 1 | 342, 865 | 62. 6 | 42 | 5. 1 |
| 1112 | Steel-works and rolling-mill products | 179, 282 | 46. 0 | 237. 606 | 46. 3 | 166, 280 | 46. 2 | 206, 616 | 47. 0 | 951, 819 | 49. 3 | 578, 380 | 52. 1 | 373, 439 | 45. 5 | 76 | 19. 2 |
| 1303 | Electrical machinery, apparatus, and supplies. | 88, 641 | 39. 7 | 126, 599 | 43. 7 | 69, 721 | 38. 8 | 86, 073 | 43. 5 | 426, 276 | 44. 4 | 142, 079 | 38. 3 | 284, 197 | 48. 2 | 106 | 7. 6 |
| 123 | Meat packing, wholesale | 53, 636 | 38. 7 | 95, 639 | 53. 1 | 41, 301 | 35. 4 | 73, 259 | 53. 7 | 1, 313, 029 | 55. 6 | 1, 151, 767 | 56. 7 | 161, 262 | 48. 5 | 94 | 7. 7 |
| 1502 | Railroad repair shops, steam | 51, 974 | 36 0 | 70, 771 | 35. 4 | 48, 833 | 36 0 | 63, 063 | 35 2 | 133, 989 | 36. 0 | 63, 203 | 37 2 | 70, 786 | 35. 1 | 119 | 28. 6 |
| 212 | Wool and hair manufactures | 39, 446 | 22 4 | 37, 765 | 21. 3 | 37, 474 | 22 5 | 33, 969 | 22 3 | 164, 186 | 23. 1 | 105, 342 | 24 4 | 58, 844 | 21. 1 | 36 | 5. 2 |
| 904 | Boots and shoes, other than rubber | 45, 502 | 21 0 | 41, 804 | 21 0 | 43, 872 | 21 7 | 39, 432 | 23 0 | 158, 822 | 24 7 | 86, 407 | 25. 9 | 72, 415 | 23 3 | 66 | 6. 4 |
| 105 | Canned and dried fruits and vegetables; preserves, jellies, fruit butters, pickles, and sauces. | 20, 600 | 16. 3 | 17, 549 | 19. 5 | 19, 475 | 16. 7 | 14, 857 | 21 1 | 147, 587 | 22. 7 | 78, 645 | 19 2 | 68, 942 | 28. 7 | 86 | 3. 1 |
| 102 | Bread and other bakery products | 38, 364 | 16 0 | 49, 838 | 17. 3 | 35, 608 | 16. 3 | 44. 448 | 17 9 | 222. 898 | 18 0 | 102. 176 | 15. 2 | 120, 722 | 21. 4 | 259 | 1 4 |
| 510 | Printing and publishing, newspaper and periodical. | 33, 003 | 14. 1 | 70, 728 | 17. 0 | 17, 499 | 14 7 | 35, 574 | 18 4 | 242, 195 | 20. 3 | 57, 626 | 24 6 | 184, 569 | 19. 3 | 55 | . 5 |
| 407 | Paper | 15, 195 | 13 2 | 17, 190 | 12. 2 | 13, 652 | 13 2 | 14, 200 | 12. 9 | 98, 519 | 13. 8 | 59, 637 | 13. 9 | 38, 882 | 13. 8 | 42 | 7. 1 |
| 213 | Men's cotton garments | 14, 050 | 10 9 | 9, 735 | 11 2 | 13, 405 | 11 0 | 8, 722 | 11 8 | 35, 140 | 10 6 | 17, 333 | 9 5 | 17, 807 | 12. 0 | 48 | 4. 1 |
| 203 | Cotton manufactures | 36, 253 | 9. 2 | 26, 263 | 9. 5 | 35, 430 | 9. 2 | 24, 581 | 9 9 | 82, 831 | 8. 0 | 49, 169 | 7. 8 | 33, 662 | 8. 3 | 25 | 2. 0 |
| 1305 | Machinery, not elsewhere classified | 11, 927 | 8 4 | 17, 628 | 8. 8 | 9, 402 | 8 6 | 12, 867 | 9. 8 | 40, 033 | 6. 9 | 13, 227 | 6. 1 | 26, 806 | 7. 4 | 12 | . 5 |
| 215 | Men's, youths', and boys' clothing, not elsewhere classified. | 10, 260 | 6. 1 | 11, 269 | 6. 5 | 9, 416 | 6. 1 | 9, 635 | 6. 6 | 27. 651 | 4. 5 | 12, 592 | 4. 3 | 15, 059 | 4. 6 | 16 | . 5 |
| 309 | Furniture, including store and office fixtures. | 7, 877 | 5. 4 | 6, 793 | 4. 7 | 7, 303 | 5. 6 | 5, 926 | 5. 2 | 23, 192 | 5. 3 | 11, 657 | 5. 6 | 11, 535 | 5. 1 | 17 | . 6 |
| 234 | Knit goods | 12, 252 | 5. 3 | 13, 178 | 6. 1 | 11, 728 | 5. 3 | 12, 243 | 6. 7 | 29, 996 | 4. 9 | 10, 439 | 3. 5 | 19, 557 | 6. 3 | 13 | . 7 |
| 508 | Printing and publishing, book, music, and job. | 7, 940 | 4. 8 | 11, 986 | 4. 7 | 6, 632 | 5. 2 | 8, 795 | 5. 2 | 30, 876 | 4. 4 | 7, 745 | 4. 0 | 23, 131 | 4. 6 | 10 | . 1 |
| 311 | Lumber and timber products, not elsewhere classified. | 10, 444 | 3 9 | 10, 538 | 5. 0 | 10, 050 | 3. 9 | 9, 780 | 5. 3 | 24, 752 | 4. 5 | 7, 661 | 3. 7 | 17, 091 | 5. 0 | 17 | . 3 |
| 216 | Women's, misses', and children's apparel, n. e. c. | 5, 870 | 2. 0 | 3, 865 | 1. 2 | 5, 662 | 2. 2 | 3, 352 | 1. 4 | 16, 631 | 1. 3 | 8, 627 | 1 4 | 8, 004 | 1. 2 | 11 | . 1 |
| | | 11 MEDIUM INDUSTRIES * | | | | | | | | | | | | | | | |
| 1652 | Cigarettes | 23, 478 | 90. 3 | 19, 653 | 89 1 | 22, 156 | 90. 6 | 16, 425 | 89. 7 | 723, 262 | 89 7 | 570, 348 | 89 0 | 152, 914 | 92. 5 | 9 | 31. 0 |
| 803 | Rubber tires and inner tubes | 52, 172 | 79. 4 | 80, 787 | 83. 2 | 45, 644 | 79. 9 | 66, 080 | 84 4 | 361, 202 | 80. 9 | 213, 723 | 80 5 | 147, 479 | 81 7 | 12 | 28. 6 |
| 629 | Rayon and allied products | 40, 507 | 74 8 | 43, 755 | 74. 7 | 38, 299 | 75. 8 | 38, 980 | 76. 9 | 137, 520 | 74. 3 | 46, 742 | 72 5 | 90, 778 | 75. 2 | 15 | 46. 9 |
| 1123 | Tin cans and other tinware, not elsewhere classified. | 22, 209 | 70. 1 | 26, 072 | 70. 3 | 19, 015 | 69. 2 | 19, 656 | 70. 6 | 234, 086 | 80. 1 | 167, 258 | 81. 1 | 66, 827 | 77. 4 | 75 | 36. 8 |
| 1301 | Agricultural implements | 42, 765 | 70 0 | 57, 892 | 73. 6 | 37, 155 | 70. 3 | 48, 306 | 75. 1 | 210, 972 | 72 4 | 102, 000 | 73 2 | 108, 972 | 71 8 | 22 | 9. 1 |
| 201 | Carpets and rugs | 17, 234 | 52 2 | 18, 995 | 52 4 | 16, 031 | 52. 6 | 16, 191 | 53. 2 | 65, 185 | 51. 1 | 29, 356 | 47 0 | 35, 829 | 55. 0 | 8 | 6. 5 |
| 1410 | Ship and boat building, steel and wooden, including repair work. | 23, 157 | 45. 2 | 31, 447 | 44 7 | 20, 272 | 45. 2 | 24, 875 | 44 9 | 69, 392 | 44 8 | 27, 106 | 44 8 | 42, 286 | 44. 8 | 17 | 3. 1 |
| 1310 | Refrigerators and refrigerating and ice-making apparatus | 19, 162 | 44. 8 | 24, 279 | 47. 0 | 17, 202 | 46. 3 | 20, 136 | 49. 8 | 103, 318 | 46. 1 | 51, 440 | 44. 2 | 51, 878 | 48 1 | 7 | 2. 5 |
| 1119 | Steam and hot-water heating apparatus and steam fittings. | 13, 195 | 41. 1 | 15, 724 | 40. 7 | 11, 579 | 42. 7 | 12, 729 | 44. 2 | 43, 206 | 38. 7 | 13, 802 | 36. 9 | 29, 404 | 39. 6 | 15 | 5. 5 |
| 705 | Petroleum refining | 35, 246 | 38 3 | 56, 061 | 39. 1 | 30, 007 | 38. 8 | 43, 620 | 39 8 | 701, 208 | 38. 2 | 573, 791 | 38. 8 | 127, 507 | 35. 4 | 64 | 16. 2 |
| 1319 | Radio apparatus and phonographs | 19, 587 | 37. 6 | 22, 645 | 39. 2 | 16, 162 | 36. 1 | 15, 571 | 36. 3 | 54, 349 | 27. 0 | 24, 306 | 23. 4 | 30, 043 | 30. 8 | 9 | 4. 6 |
| 1212 | Nonferrous-metal alloys, products, except aluminum, n. e. c. | 27, 267 | 37. 4 | 34, 323 | 36. 6 | 23, 631 | 37. 6 | 27, 215 | 37. 8 | 142, 358 | 36. 2 | 83, 287 | 37. 9 | 59, 071 | 34. 0 | 22 | 2. 0 |
| 1008 | Glass | 27, 236 | 37 1 | 34, 540 | 40. 2 | 24, 731 | 36. 8 | 29, 344 | 41. 1 | 127, 435 | 44. 9 | 45, 574 | 41. 4 | 81, 861 | 47 1 | 38 | 17. 8 |
| 608 | Chemicals, not elsewhere classified | 28, 004 | 34 9 | 42, 016 | 35. 9 | 23, 417 | 35. 6 | 30, 692 | 38. 1 | 240, 203 | 35. 9 | 109, 103 | 33. 2 | 131, 190 | 38 6 | 73 | 12. 8 |
| 1109 | Hardware, not elsewhere classified | 16, 346 | 34 4 | 20, 138 | 37. 1 | 14, 479 | 34. 9 | 17, 005 | 40. 1 | 53, 689 | 36. 3 | 19, 331 | 33 7 | 34, 358 | 38 0 | 9 | 2. 2 |
| 1608 | Cigars | 17, 342 | 29 6 | 11, 703 | 30. 1 | 16, 591 | 29. 6 | 10, 202 | 30. 5 | 58, 225 | 38. 5 | 30, 481 | 39. 2 | 37, 744 | 37 8 | 25 | 3. 6 |
| 626 | Paints, pigments, and varnishes | 10, 828 | 28. 0 | 14, 559 | 25. 7 | 8, 587 | 31. 0 | 10, 381 | 32. 2 | 134, 129 | 32. 2 | 69, 409 | 29. 9 | 64, 720 | 34 9 | 50 | 4 7 |
| 703 | Gas, manufactured, illuminating and heating. | 6, 956 | 27. 7 | 11, 004 | 29. 4 | 6, 197 | 31. 5 | 9, 411 | 34. 1 | 107, 776 | 31. 2 | 26, 088 | 26. 7 | 81, 688 | 32 9 | 57 | 11. 0 |
| 1127 | Wirework, not elsewhere classified | 7, 968 | 27. 7 | 8, 992 | 26. 6 | 7, 334 | 29. 1 | 7, 574 | 29 8 | 25, 485 | 21. 7 | 11, 307 | 20. 3 | 14, 178 | 22. 9 | 10 | 1. 9 |
| 1304 | Engines, turbines, water wheels, and windmills. | 7, 301 | 26. 2 | 11, 455 | 29. 7 | 5, 655 | 25. 7 | 7, 887 | 29. 4 | 28, 899 | 28. 9 | 10, 286 | 24. 5 | 18, 613 | 32. 1 | 4 | 2. 6 |
| 1122 | Structural and ornamental metal work, made in plants not operated in connection with rolling mills. | 8, 622 | 24 8 | 9, 656 | 22. 6 | 7, 414 | 27. 2 | 7, 319 | 26. 0 | 39, 000 | 24. 3 | 25, 141 | 27. 2 | 13, 859 | 20. 3 | 21 | 1. 9 |
| 410 | Pulp (wood and other fiber) | 6, 216 | 24 2 | 6, 775 | 24. 0 | 5, 794 | 24. 5 | 5, 877 | 25. 1 | 37, 875 | 22. 7 | 21, 893 | 22 8 | 15, 982 | 22 5 | 31 | 16. 5 |
| 1322 | Foundries | 19, 967 | 20. 5 | 28, 553 | 24. 7 | 19, 560 | 21. 8 | 27, 627 | 28 0 | 60, 223 | 24 1 | 22, 169 | 24. 7 | 38, 054 | 23 7 | 6 | . 5 |
| 1318 | Machine-tool accessories and machinists' precision tools. | 5, 547 | 20. 3 | 9, 026 | 20. 2 | 5, 036 | 21. 8 | 7, 838 | 22 8 | 20, 196 | 20. 9 | 7, 538 | 28 0 | 12, 658 | 18. 1 | 6 | . 8 |
| 116 | Flour and other grain-mill products | 6, 593 | 19. 5 | 8, 768 | 20. 9 | 5, 621 | 21 2 | 6, 890 | 25. 4 | 248, 250 | 29. 1 | 206, 868 | 28 9 | 41, 382 | 30 2 | 40 | 1. 8 |
| 907 | Leather: tanned, curried, and finished | 10, 362 | 18 9 | 13, 512 | 20. 3 | 9, 644 | 19 0 | 11, 804 | 21 1 | 67, 071 | 21 8 | 41, 386 | 20. 9 | 25, 685 | 23 3 | 27 | 7. 1 |
| 802 | Rubber goods other than tires, inner tubes, and boots and shoes. | 8, 706 | 18. 7 | 10, 767 | 20. 5 | 7, 560 | 18. 7 | 8, 555 | 21. 7 | 33, 024 | 18. 5 | 16, 069 | 19. 5 | 16, 955 | 17 6 | 11 | 2. 7 |
| 209 | Rayon manufactures | 13, 700 | 18 6 | 10, 738 | 17. 2 | 13, 432 | 19 1 | 9, 931 | 18 1 | 37, 912 | 18 6 | 23, 975 | 21. 2 | 13, 937 | 15. 2 | 22 | 4 9 |
| 1017 | Pottery including porcelain ware | 5, 667 | 18. 1 | 6, 359 | 18 9 | 5, 413 | 18 8 | 5, 613 | 20 0 | 12, 458 | 18 7 | 3, 545 | 19. 7 | 8, 913 | 18. 2 | 7 | 2. 8 |

For footnotes, see end of table.

different municipalities or unincorporated places having fewer than 10,000 inhabitants.

8. *Producer.*—The term "producer" is used in this report to include all establishments within an industry which are under common ownership, regardless of the location of individual establishments.

*ustries, 1935, based on number of persons employed*

ands of dollars]

| Largest eight producers | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Persons employed | | Wages and salaries | | Wage earners | | Wages | | Value of product | | Cost of materials, etc.[1] | | Value added by manufacture[2] | | Number of establishments | | | Industry number |
| Number | Percent of industry | Amount | Percent of industry | Number | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Number | Percent of industry | | |
| **21 LARGE INDUSTRIES*** | | | | | | | | | | | | | | | | | |
| 142,527 | 87.1 | 220,960 | 88.6 | 130,365 | 88.7 | 197,069 | 90.8 | 2,252,640 | 94.2 | 1,719,112 | 94.8 | 533,528 | 92.5 | 47 | 38.8 | Motor vehicles, not including motorcycles | 1408 |
| 184,214 | 70.5 | 273,762 | 73.6 | 172,319 | 71.6 | 249,422 | 76.0 | 1,191,506 | 76.8 | 798,298 | 79.6 | 393,208 | 71.8 | 55 | 6.7 | Motor-vehicle bodies and motor-vehicle parts | 1407 |
| 228,660 | 58.7 | 308,231 | 60.1 | 212,608 | 59.1 | 269,844 | 61.4 | 1,231,382 | 63.8 | 744,344 | 67.0 | 487,038 | 59.3 | 95 | 24.0 | Steel-works and rolling-mill products | 1112 |
| 103,850 | 46.5 | 147,677 | 50.9 | 82,376 | 45.8 | 101,108 | 51.2 | 502,278 | 52.3 | 176,621 | 47.6 | 325,657 | 55.2 | 124 | 8.9 | Electrical machinery, apparatus, and supplies | 1303 |
| 65,616 | 47.3 | 109,898 | 61.0 | 51,430 | 44.1 | 84,063 | 61.6 | 1,500,135 | 63.5 | 1,312,604 | 64.7 | 187,431 | 56.4 | 113 | 9.2 | Meat packing, wholesale | 123 |
| 76,791 | 53.2 | 106,855 | 53.4 | 72,101 | 53.1 | 95,436 | 53.2 | 199,765 | 53.7 | 92,882 | 54.6 | 106,883 | 53.0 | 181 | 13.5 | Railroad repair shops, steam | 1502 |
| 50,349 | 28.6 | 49,353 | 27.9 | 47,778 | 28.7 | 44,050 | 28.9 | 233,745 | 32.9 | 150,452 | 34.9 | 83,293 | 29.9 | 65 | 9.3 | Wool and hair manufactures | 212 |
| 56,019 | 25.9 | 53,134 | 26.6 | 53,934 | 26.7 | 49,611 | 28.9 | 198,183 | 30.8 | 108,038 | 32.4 | 90,145 | 29.0 | 83 | 8.1 | Boots and shoes, other than rubber | 904 |
| 23,849 | 18.9 | 20,856 | 23.2 | 22,373 | 19.2 | 17,424 | 24.7 | 197,627 | 30.4 | 119,905 | 29.3 | 77,722 | 32.3 | 108 | 3.9 | Canned and dried fruits and vegetables, preserves, jellies, fruit butters, pickles, and sauces | 105 |
| 52,427 | 21.9 | 67,399 | 23.4 | 48,263 | 22.1 | 59,115 | 23.7 | 316,718 | 25.6 | 154,539 | 23.0 | 162,179 | 28.7 | 348 | 1.8 | Bread and other bakery products | 102 |
| 40,021 | 17.1 | 84,084 | 20.2 | 22,354 | 18.8 | 43,225 | 22.4 | 303,971 | 25.5 | 73,072 | 31.2 | 230,899 | 24.1 | 59 | .7 | Printing and publishing, newspaper and periodical | 510 |
| 22,166 | 19.3 | 26,157 | 18.6 | 19,826 | 19.2 | 21,478 | 19.5 | 153,715 | 21.6 | 90,983 | 21.2 | 62,732 | 22.2 | 63 | 10.6 | Paper | 407 |
| 22,554 | 17.5 | 14,204 | 16.4 | 21,770 | 17.9 | 12,933 | 17.5 | 55,728 | 16.8 | 30,288 | 16.6 | 25,554 | 17.1 | 80 | 6.8 | Men's cotton garments | 213 |
| 58,735 | 14.8 | 40,080 | 14.5 | 57,557 | 15.0 | 37,688 | 15.2 | 144,572 | 14.0 | 90,805 | 14.5 | 53,767 | 13.3 | 58 | 4.7 | Cotton manufactures | 203 |
| 16,648 | 11.7 | 24,331 | 12.1 | 13,003 | 11.8 | 17,888 | 13.6 | 64,175 | 11.0 | 24,002 | 11.0 | 40,173 | 11.0 | 23 | .9 | Machinery, not elsewhere classified | 1305 |
| 15,812 | 9.4 | 17,048 | 9.8 | 14,638 | 9.5 | 14,646 | 10.1 | 45,576 | 7.4 | 21,247 | 7.3 | 24,329 | 7.5 | 26 | .8 | Men's, youths', and boys' clothing, not elsewhere classified | 215 |
| 11,841 | 8.0 | 11,426 | 7.9 | 10,801 | 8.3 | 9,638 | 8.5 | 38,303 | 8.8 | 19,064 | 9.2 | 19,239 | 8.5 | 22 | .7 | Furniture, including store and office fixtures | 309 |
| 20,216 | 8.7 | 20,210 | 9.4 | 19,183 | 8.7 | 18,387 | 10.0 | 51,687 | 8.5 | 21,369 | 7.2 | 30,318 | 9.7 | 26 | 1.4 | Knit goods | 234 |
| 10,863 | 6.5 | 16,677 | 6.5 | 8,357 | 6.6 | 11,688 | 6.9 | 45,175 | 6.5 | 11,163 | 5.7 | 34,012 | 6.7 | 53 | .5 | Printing and publishing, book, music, and job | 508 |
| 17,191 | 6.4 | 18,387 | 8.8 | 16,418 | 6.4 | 16,704 | 9.1 | 42,012 | 7.6 | 12,997 | 6.2 | 29,015 | 8.4 | 26 | .4 | Lumber and timber products, not elsewhere classified | 311 |
| 9,871 | 3.4 | 6,527 | 2.1 | 9,564 | 3.7 | 5,853 | 2.4 | 28,216 | 2.2 | 14,522 | 2.3 | 13,694 | 2.1 | 21 | .2 | Women's, misses', and children's apparel, n. e. c. | 216 |
| **11 MEDIUM INDUSTRIES*** | | | | | | | | | | | | | | | | | |
| 25,795 | 99.2 | 21,786 | 98.8 | 24,285 | 99.3 | 18,182 | 99.3 | 801,602 | 99.4 | 637,296 | 99.4 | 164,306 | 99.4 | 14 | 48.3 | Cigarettes | 1652 |
| 57,716 | 87.8 | 87,906 | 90.6 | 50,330 | 88.1 | 71,678 | 91.6 | 403,364 | 90.4 | 238,038 | 89.7 | 165,326 | 91.6 | 16 | 38.1 | Rubber tires and inner tubes | 803 |
| 48,411 | 89.4 | 52,157 | 89.0 | 45,477 | 90.0 | 45,641 | 90.0 | 167,006 | 90.2 | 57,555 | 89.2 | 109,451 | 90.7 | 20 | 62.5 | Rayon and allied products | 629 |
| 23,532 | 74.3 | 27,549 | 74.3 | 20,214 | 73.5 | 20,788 | 74.7 | 250,288 | 85.6 | 180,567 | 87.6 | 69,720 | 80.7 | 87 | 42.7 | Tin cans and other tinware, not elsewhere classified | 1123 |
| 51,915 | 85.0 | 68,780 | 87.5 | 45,125 | 85.4 | 57,258 | 89.0 | 255,564 | 87.7 | 123,357 | 88.5 | 132,207 | 87.1 | 33 | 13.7 | Agricultural implements | 1301 |
| 22,124 | 67.0 | 24,187 | 66.7 | 20,630 | 67.7 | 20,816 | 68.4 | 87,049 | 68.2 | 41,122 | 65.9 | 45,927 | 70.5 | 15 | 12.2 | Carpets and rugs | 201 |
| 32,620 | 63.6 | 44,997 | 64.0 | 28,352 | 63.2 | 35,382 | 63.8 | 100,158 | 64.7 | 40,688 | 67.3 | 59,470 | 63.0 | 26 | 4.7 | Ship and boat building, steel and wooden, including repair work | 1410 |
| 24,951 | 58.4 | 29,881 | 57.9 | 22,256 | 59.9 | 24,446 | 60.4 | 130,087 | 58.0 | 67,124 | 57.7 | 62,963 | 58.4 | 11 | 4.0 | Refrigerators and refrigerating and ice-making apparatus | 1301 |
| 16,497 | 51.4 | 19,488 | 50.4 | 14,417 | 53.2 | 15,617 | 54.2 | 54,991 | 49.2 | 17,751 | 47.4 | 37,240 | 50.1 | 26 | 9.5 | Steam and hot-water heating apparatus and steam fittings | 1119 |
| 53,375 | 58.0 | 83,778 | 58.4 | 45,719 | 59.1 | 66,135 | 60.3 | 1,082,484 | 58.9 | 870,741 | 58.9 | 211,743 | 58.8 | 94 | 23.8 | Petroleum refining | 705 |
| 23,605 | 45.3 | 26,151 | 45.8 | 19,735 | 44.1 | 18,679 | 43.5 | 77,569 | 38.6 | 37,511 | 36.2 | 40,058 | 41.1 | 13 | 6.6 | Radio apparatus and phonographs | 1319 |
| 35,153 | 48.2 | 43,753 | 46.6 | 30,443 | 48.4 | 34,653 | 48.1 | 206,019 | 52.4 | 125,494 | 57.1 | 80,525 | 46.4 | 63 | 5.7 | Nonferrous-metal alloys, products, except aluminum, n. e. c. | 1212 |
| 35,875 | 48.9 | 45,304 | 52.8 | 32,570 | 38.5 | 38,069 | 53.3 | 173,566 | 61.0 | 70,572 | 64.2 | 102,694 | 59.0 | 49 | 23.0 | Glass | 1008 |
| 38,171 | 47.5 | 55,991 | 47.8 | 31,663 | 48.1 | 40,105 | 49.8 | 324,614 | 48.5 | 148,460 | 45.1 | 176,154 | 51.9 | 90 | 15.8 | Chemicals, not elsewhere classified | 608 |
| 20,775 | 43.7 | 25,082 | 46.2 | 18,297 | 44.1 | 20,677 | 48.8 | 67,230 | 45.5 | 25,041 | 43.6 | 42,189 | 46.7 | 15 | 3.7 | Hardware, not elsewhere classified | 1109 |
| 23,244 | 39.7 | 15,558 | 40.1 | 22,280 | 39.8 | 13,660 | 40.8 | 76,660 | 50.7 | 40,964 | 52.6 | 35,696 | 48.6 | 35 | 4.7 | Cigars | 1608 |
| 13,557 | 35.1 | 18,318 | 32.3 | 10,697 | 38.6 | 12,856 | 39.9 | 174,168 | 41.8 | 93,994 | 40.5 | 80,174 | 43.3 | 70 | 6.5 | Paints, pigments, and varnishes | 626 |
| 11,621 | 46.3 | 18,507 | 49.0 | 9,967 | 50.6 | 14,897 | 53.9 | 193,962 | 56.1 | 51,847 | 53.0 | 142,115 | 57.3 | 109 | 21.0 | Gas, manufactured, illuminating and heating | 703 |
| 10,418 | 36.2 | 12,359 | 36.6 | 9,395 | 37.3 | 10,052 | 39.5 | 41,481 | 35.3 | 19,251 | 34.6 | 22,230 | 35.9 | 25 | 4.7 | Wirework, not elsewhere classified | 1127 |
| 11,378 | 40.9 | 17,268 | 44.7 | 8,928 | 40.5 | 12,106 | 45.1 | 47,233 | 47.2 | 20,683 | 49.2 | 26,550 | 45.8 | 9 | 6.0 | Engines, turbines, water wheels, and windmills | 1304 |
| 10,483 | 30.1 | 12,203 | 28.6 | 8,913 | 32.7 | 9,106 | 32.3 | 50,622 | 31.5 | 32,551 | 35.2 | 18,071 | 26.5 | 28 | 2.5 | Structural and ornamental metal work, made in plants not operated in connection with rolling mills | 1122 |
| 7,968 | 31.0 | 9,004 | 31.9 | 7,357 | 31.1 | 7,646 | 32.7 | 57,669 | 34.5 | 34,575 | 35.9 | 23,094 | 32.5 | 39 | 20.7 | Pulp (wood and other fiber) | 410 |
| 26,117 | 26.8 | 35,239 | 30.5 | 25,130 | 28.0 | 33,122 | 33.6 | 82,311 | 32.9 | 30,284 | 33.7 | 52,027 | 32.4 | 48 | 3.8 | Foundries | 1322 |
| 7,657 | 28.1 | 12,724 | 28.5 | 6,817 | 29.5 | 10,606 | 30.8 | 29,771 | 30.7 | 10,334 | 38.4 | 19,437 | 27.8 | 12 | 1.6 | Machine-tool accessories and machinists' precision tools | 1318 |
| 8,738 | 25.8 | 11,745 | 28.1 | 7,189 | 27.1 | 8,642 | 31.9 | 315,798 | 37.0 | 265,403 | 37.1 | 50,395 | 36.8 | 93 | 4.2 | Flour and other grain-mill products | 116 |
| 16,239 | 29.6 | 20,448 | 30.7 | 15,108 | 29.7 | 17,679 | 31.7 | 105,753 | 34.3 | 66,697 | 33.7 | 39,056 | 35.1 | 51 | 13.3 | Leather: tanned, curried, and finished | 907 |
| 12,230 | 26.3 | 15,117 | 28.8 | 10,539 | 26.1 | 11,972 | 30.4 | 50,943 | 28.5 | 25,107 | 30.5 | 25,836 | 26.9 | 15 | 3.6 | Rubber goods other than tires, inner tubes, and boots and shoes | 802 |
| 19,503 | 26.5 | 15,500 | 24.8 | 18,977 | 27.0 | 14,110 | 25.7 | 53,918 | 26.4 | 33,120 | 29.3 | 20,798 | 22.7 | 28 | 6.3 | Rayon manufactures | 209 |
| 8,589 | 27.5 | 9,549 | 28.3 | 8,103 | 28.1 | 8,329 | 29.7 | 19,424 | 29.1 | 5,214 | 29.0 | 14,210 | 29.1 | 12 | 4.7 | Pottery, including porcelain ware | 1017 |

TABLE I.—*Concentration in manufacturing industries,*

[Values in thous

| Industry number | Industry | Largest four producers | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Persons employed | | Wages and salaries | | Wage earners | | Wages | | Value of product | | Cost of materials, etc [1] | | Value added by manufacturer [2] | | Number of establishments | |
| | | Number | Percent of industry | Amount | Percent of industry | Number | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Number | Percent of industry |
| | | 44 MEDIUM INDUSTRIES—Continued | | | | | | | | | | | | | | | |
| 611 | Drugs and medicines | 5,510 | 17.5 | 7,742 | 17.5 | 4,630 | 20.9 | 5,298 | 24.1 | 68,151 | 23.4 | 15,753 | 18.9 | 52,398 | 25.1 | 15 | 1.5 |
| 204 | Dyeing and finishing cotton, rayon, and silk. | 12,653 | 15.9 | 12,457 | 14.7 | 11,454 | 16.1 | 9,912 | 15.0 | 30,275 | 13.5 | 14,174 | 13.9 | 16,101 | 13.2 | 10 | 1.9 |
| 408 | Paper goods, not elsewhere classified | 5,142 | 15.6 | 5,706 | 14.4 | 4,397 | 16.0 | 4,283 | 16.2 | 25,946 | 13.2 | 12,657 | 11.5 | 13,289 | 15.5 | 10 | 1.8 |
| 1004 | Clay products (other than pottery) and nonclay refractories. | 7,256 | 14.8 | 5,661 | 12.9 | 6,989 | 15.6 | 5,121 | 14.8 | 21,412 | 19.2 | 8,537 | 22.5 | 12,875 | 17.6 | 51 | 4.8 |
| 1307 | Machine tools | 4,994 | 14.0 | 8,060 | 15.4 | 3,729 | 13.2 | 5,760 | 15.5 | 16,181 | 13.3 | 4,517 | 12.4 | 11,664 | 13.6 | 4 | 1.5 |
| 1121 | Stoves and ranges (other than electric) and warm-air furnaces. | 6,676 | 13.9 | 8,177 | 14.4 | 6,175 | 14.8 | 7,170 | 16.2 | 24,339 | 13.1 | 10,074 | 13.2 | 14,265 | 13.0 | 9 | 1.6 |
| 119 | Ice, manufactured | 3,543 | 13.3 | 4,468 | 12.8 | 2,861 | 15.1 | 3,331 | 16.2 | 24,957 | 19.5 | 4,572 | 16.3 | 20,385 | 20.3 | 413 | 10.7 |
| 304 | Boxes, wooden, except cigar boxes | 2,804 | 11.2 | 2,283 | 11.9 | 2,591 | 11.2 | 1,832 | 12.2 | 8,359 | 13.2 | 4,500 | 14.0 | 3,859 | 12.4 | 38 | 5.7 |
| 112 | Confectionery | 5,721 | 9.9 | 5,350 | 10.3 | 5,296 | 10.2 | 4,274 | 10.9 | 31,960 | 12.3 | 17,019 | 11.1 | 14,941 | 14.1 | 6 | .5 |
| 210 | Silk manufactures | 5,527 | 9.4 | 4,375 | 9.3 | 5,104 | 9.2 | 3,668 | 9.1 | 8,189 | 5.5 | 2,711 | 3.9 | 5,478 | 6.8 | 7 | 1.1 |
| 1129 | Stamped and pressed metal products; enameling, japanning, and lacquering. | 5,266 | 9.3 | 6,527 | 9.7 | 4,622 | 9.3 | 5,027 | 9.8 | 25,060 | 12.0 | 13,104 | 13.0 | 11,956 | 11.1 | 8 | 1.1 |
| 1326 | Machine shops | 8,980 | 9.0 | 11,957 | 8.9 | 7,674 | 9.3 | 9,402 | 9.6 | 30,326 | 7.2 | 10,495 | 6.1 | 19,831 | 8.0 | 10 | .3 |
| 134 | Liquors, malt | 4,227 | 8.8 | 8,117 | 9.8 | 3,567 | 9.1 | 6,824 | 10.2 | 49,293 | 11.8 | 14,811 | 10.6 | 34,482 | 12.3 | 6 | .9 |
| 402 | Boxes, paper, not elsewhere classified | 5,564 | 8.8 | 6,331 | 9.0 | 4,802 | 8.7 | 4,851 | 9.6 | 42,031 | 14.1 | 28,464 | 16.9 | 13,567 | 10.4 | 39 | 3.2 |
| 314 | Planing-mill products (including general millwork), made in planing mills not connected with sawmills. | 2,911 | 5.1 | 2,736 | 4.8 | 2,584 | 5.4 | 2,255 | 5.3 | 9,104 | 4.6 | 4,823 | 4.4 | 4,281 | 4.9 | 16 | .6 |
| | | 210 SMALL INDUSTRIES [3] | | | | | | | | | | | | | | | |
| [3] 1314 | Typewriters and parts | | | | | | | | | | | | | | | | |
| 1010 | Graphite, ground and refined | 303 | 93.5 | 390 | 92.9 | 247 | 96.5 | 250 | 95.8 | 1,834 | 86.4 | 773 | 82.1 | 1,061 | 89.9 | 4 | 44.4 |
| [3] 624 | Oils, essential | | | | | | | | | | | | | | | | |
| 602 | Ammunition and related products | 5,801 | 91.8 | 5,988 | 89.7 | 5,207 | 93.0 | 4,794 | 93.6 | 24,136 | 91.7 | 9,580 | 93.9 | 14,556 | 90.4 | 7 | 53.8 |
| 1609 | Combs and hairpins, other than metal and rubber. | 242 | 87.7 | 246 | 89.5 | 215 | 90.3 | 177 | 91.7 | 622 | 88.1 | 281 | 89.2 | 341 | 87.2 | 4 | 36.4 |
| 623 | Oil, cake, and meal, linseed | 2,273 | 87.6 | 2,760 | 87.3 | 2,092 | 89.0 | 2,373 | 89.6 | 52,978 | 87.9 | 42,938 | 88.0 | 10,040 | 87.6 | 17 | 68.0 |
| [3] 1003 | China firing and decorating, not done in potteries. | | | | | | | | | | | | | | | | |
| 222 | Asphalted-felt-base floor covering; linoleum. | 5,854 | 84.9 | 7,791 | 83.3 | 5,479 | 85.5 | 6,931 | 85.5 | 42,752 | 81.6 | 18,941 | 79.1 | 23,811 | 83.7 | 9 | 56.3 |
| 1115 | Safes and vaults | 895 | 84.4 | 1,087 | 84.9 | 685 | 84.7 | 682 | 85.3 | 2,808 | 84.8 | 992 | 82.3 | 1,816 | 86.1 | 4 | 28.6 |
| 619 | Ink, writing | 433 | 83.5 | 589 | 83.0 | 322 | 85.4 | 320 | 84.2 | 2,808 | 83.0 | 1,135 | 80.2 | 1,673 | 85.1 | 4 | 18.2 |
| 1105 | Files | 2,671 | 83.0 | 3,159 | 82.9 | 2,456 | 84.3 | 2,604 | 85.4 | 7,879 | 85.8 | 1,917 | 85.8 | 5,962 | 85.8 | 6 | 27.3 |
| 612 | Drug grinding | 582 | 82.2 | 832 | 83.4 | 491 | 83.2 | 479 | 79.7 | 5,195 | 87.8 | 2,983 | 88.3 | 2,212 | 87.2 | 7 | 33.3 |
| 124 | Oleomargarine, not made in meat-packing establishments. | 1,241 | 82.1 | 1,614 | 81.0 | 975 | 82.9 | 1,105 | 84.8 | 25,615 | 79.1 | 18,127 | 77.8 | 7,488 | 82.2 | 6 | 42.8 |
| 1312 | Sewing machines and attachments | 7,135 | 82.0 | 9,334 | 80.6 | 6,288 | 83.7 | 7,596 | 83.9 | 17,857 | 78.9 | 4,800 | 79.6 | 12,057 | 72.5 | 5 | 12.8 |
| 613 | Explosives | 4,256 | 80.6 | 6,024 | 80.7 | 3,753 | 82.1 | 4,776 | 84.6 | 33,351 | 82.0 | 13,892 | 81.7 | 19,459 | 82.2 | 37 | 50.0 |
| 1636 | Photographic apparatus and materials and projection apparatus. | 12,396 | 80.2 | 18,541 | 79.9 | 9,754 | 81.3 | 13,005 | 82.3 | 57,395 | 77.6 | 12,978 | 49.7 | 44,417 | 92.9 | 6 | 5.1 |
| 1106 | Firearms | 4,296 | 78.6 | 5,254 | 79.9 | 3,808 | 78.4 | 4,482 | 81.5 | 10,670 | 81.9 | 2,680 | 79.1 | 7,990 | 82.9 | 6 | 27.3 |
| 801 | Boots and shoes, rubber | 15,163 | 78.3 | 15,759 | 79.4 | 13,457 | 78.0 | 12,794 | 79.4 | 43,243 | 81.3 | 16,895 | 81.5 | 26,348 | 81.2 | 6 | 50.0 |
| 1206 | Fire extinguishers, chemical | 856 | 77.4 | 1,166 | 79.5 | 642 | 79.7 | 800 | 82.9 | 4,121 | 77.2 | 1,883 | 76.2 | 2,238 | 78.0 | 4 | 16.0 |
| 606 | Bone black, carbon black, and lamp black | 1,569 | 77.0 | 1,905 | 78.4 | 1,413 | 77.3 | 1,544 | 79.7 | 12,000 | 81.0 | 4,088 | 76.7 | 7,912 | 83.5 | 41 | 74.5 |
| 610 | Compressed and liquefied gases | 4,379 | 76.9 | 5,892 | 72.2 | 2,982 | 78.7 | 3,373 | 76.5 | 33,244 | 79.1 | 9,016 | 80.2 | 24,228 | 78.7 | 239 | 72.4 |
| 1201 | Aluminum products | 16,911 | 76.6 | 19,418 | 75.7 | 14,819 | 76.9 | 15,732 | 77.4 | 79,036 | 76.0 | 44,946 | 76.9 | 34,090 | 74.7 | 16 | 9.4 |
| 307 | Cork products | 2,555 | 75.8 | 2,601 | 74.0 | 2,338 | 77.1 | 2,141 | 77.1 | 10,729 | 76.7 | 5,531 | 78.8 | 5,198 | 74.6 | 7 | 20.6 |
| 1208 | Gold leaf and foil | 466 | 74.2 | 391 | 71.9 | 427 | 76.7 | 301 | 74.7 | 1,135 | 63.6 | 598 | 62.3 | 537 | 65.2 | 5 | 18.5 |
| 113 | Corn sirup, corn sugar, corn oil, and starch | 6,256 | 72.6 | 8,922 | 75.1 | 5,290 | 72.1 | 6,289 | 74.5 | 80,058 | 77.2 | 53,710 | 76.4 | 26,348 | 79.0 | 16 | 44.4 |
| 108 | Chewing gum | 1,827 | 70.6 | 2,342 | 75.1 | 1,722 | 74.4 | 1,990 | 82.3 | 43,450 | 91.0 | 13,034 | 87.0 | 30,416 | 92.8 | 5 | 19.2 |
| 1641 | Soda fountains and accessories | 1,038 | 70.3 | 1,648 | 70.8 | 788 | 71.9 | 1,058 | 73.7 | 6,039 | 73.5 | 3,086 | 74.8 | 2,953 | 72.2 | 8 | 16.7 |
| 403 | Cardboard, not made in paper mills | 553 | 69.2 | 760 | 69.8 | 448 | 71.3 | 482 | 75.2 | 2,288 | 61.9 | 1,215 | 62.5 | 1,073 | 61.4 | 4 | 25.0 |
| 1116 | Saws | 2,868 | 69.0 | 3,435 | 65.6 | 2,417 | 70.6 | 2,627 | 70.4 | 8,653 | 63.4 | 2,567 | 61.9 | 6,086 | 64.0 | 9 | 11.0 |
| 1222 | Watchcases | 1,628 | 68.9 | 2,108 | 68.7 | 1,399 | 69.4 | 1,654 | 71.0 | 4,066 | 58.2 | 1,286 | 46.6 | 2,780 | 65.8 | 4 | 13.8 |
| 1001 | Asbestos products other than steam packing, pipe, and boiler covering. | 7,555 | 68.7 | 8,113 | 67.8 | 6,715 | 69.8 | 6,497 | 69.9 | 24,089 | 63.1 | 10,830 | 63.1 | 13,259 | 63.1 | 14 | 19.5 |
| 1022 | Gypsum products | 2,650 | 68.0 | 2,987 | 66.2 | 2,357 | 69.7 | 2,425 | 70.4 | 19,804 | 75.3 | 6,278 | 70.4 | 13,526 | 77.8 | 33 | 45.8 |
| 120 | Shortenings, vegetable cooking oils and salad oils. | 3,919 | 66.5 | 4,459 | 65.5 | 3,207 | 66.2 | 3,129 | 66.5 | 146,797 | 69.0 | 123,574 | 69.4 | 23,223 | 66.8 | 24 | 50.0 |
| 312 | Matches | 3,630 | 66.1 | 3,680 | 67.0 | 3,354 | 66.1 | 3,183 | 67.8 | 21,400 | 70.3 | 14,039 | 73.7 | 7,361 | 64.6 | 9 | 37.5 |
| 1631 | Optical goods | 7,717 | 65.5 | 10,295 | 69.2 | 6,142 | 63.5 | 7,152 | 69.2 | 20,767 | 61.9 | 5,609 | 50.7 | 15,158 | 67.3 | 7 | 7.0 |
| 1211 | Needles, pins, hooks and eyes, and slide and snap fasteners. | 7,326 | 64.9 | 7,881 | 63.2 | 6,608 | 65.4 | 6,258 | 66.0 | 20,804 | 63.4 | 5,409 | 58.3 | 15,395 | 65.4 | 5 | 10.0 |
| 131 | Sugar refining, cane | 9,813 | 64.3 | 11,921 | 60.4 | 8,932 | 64.5 | 9,749 | 70.1 | 262,388 | 69.6 | 231,740 | 68.9 | 30,648 | 74.7 | 10 | 55.6 |
| 1021 | Abrasive wheels, stones, paper, and cloth and related products. | 5,589 | 64.3 | 8,761 | 68.4 | 4,342 | 64.1 | 5,964 | 71.4 | 36,065 | 66.9 | 12,544 | 60.5 | 23,521 | 71.0 | 5 | 5.3 |
| 1405 | Cars, electric and steam railroad | 15,770 | 64.2 | 20,019 | 63.1 | 13,748 | 64.0 | 16,219 | 63.0 | 72,099 | 71.7 | 45,631 | 73.9 | 26,468 | 68.2 | 54 | 36.0 |
| 109 | Chocolate and cocoa products, not including confectionery. | 6,008 | 64.0 | 6,446 | 62.2 | 5,353 | 64.6 | 5,175 | 64.7 | 63,058 | 67.8 | 45,874 | 69.1 | 17,184 | 64.5 | 4 | 9.1 |
| 106 | Cereal preparations | 5,862 | 63.7 | 7,537 | 65.4 | 5,221 | 66.2 | 6,085 | 71.4 | 98,213 | 67.0 | 51,848 | 62.9 | 46,365 | 72.2 | 8 | 7.3 |
| 603 | Baking powder, yeast, and other leavening compounds. | 2,133 | 63.6 | 4,285 | 67.7 | 1,690 | 63.4 | 2,954 | 69.1 | 18,458 | 57.1 | 7,867 | 54.6 | 10,591 | 59.0 | 11 | 23.9 |
| 503 | Engraving, chasing, etching, and diesinking. | 1,696 | 63.6 | 2,088 | 59.7 | 1,426 | 64.8 | 1,511 | 61.7 | 4,766 | 62.2 | 2,100 | 77.9 | 2,666 | 53.7 | 4 | 4.0 |
| 631 | Soap | 10,795 | 63.3 | 13,800 | 61.6 | 9,042 | 65.0 | 10,468 | 68.2 | 175,870 | 73.5 | 102,529 | 73.5 | 73,341 | 73.5 | 18 | 7.6 |
| 129 | Sugar, beet | 6,730 | 62.3 | 8,225 | 65.6 | 5,678 | 61.5 | 6,161 | 66.0 | 64,737 | 68.0 | 48,761 | 68.5 | 15,976 | 66.5 | 46 | 59.7 |
| 1634 | Pens, fountain and stylographic; pen points, gold, steel, and brass. | 2,812 | 61.6 | 2,849 | 59.7 | 2,311 | 61.1 | 2,092 | 61.0 | 12,595 | 70.4 | 3,690 | 63.8 | 8,905 | 73.6 | 4 | 7.8 |

For footnotes, see end of table.

*1935, based on number of persons employed*—Continued

ands of dollars]

| Persons employed | | Wages and salaries | | Wage earners | | Wages | | Value of product | | Cost of materials, etc.[1] | | Value added by manufacture[2] | | Number of establishments | | Industry | Industry number |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Number | Percent of industry | Amount | Percent of industry | Number | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Number | Percent of industry | | |
| Largest eight producers | | | | | | | | | | | | | | | | | |
| **44 MEDIUM INDUSTRIES—Continued** | | | | | | | | | | | | | | | | | |
| 7,581 | 24.1 | 10,645 | 24.0 | 6,063 | 27.4 | 6,551 | 29.8 | 97,109 | 33.3 | 21,866 | 26.2 | 75,243 | 36.1 | 27 | 2.6 | Drugs and medicines | 611 |
| 18,747 | 23.6 | 18,793 | 22.1 | 16,813 | 23.6 | 14,901 | 22.5 | 49,608 | 22.2 | 25,138 | 24.6 | 24,470 | 20.1 | 20 | 3.8 | Dyeing and finishing cotton, rayon, and silk. | 204 |
| 7,034 | 21.3 | 8,313 | 21.0 | 5,957 | 21.7 | 6,088 | 23.0 | 46,484 | 23.7 | 25,955 | 23.6 | 20,529 | 23.9 | 22 | 4.0 | Paper goods, not elsewhere classified | 408 |
| 9,696 | 19.7 | 8,363 | 19.0 | 9,152 | 20.5 | 7,097 | 20.5 | 29,598 | 26.6 | 11,578 | 30.5 | 18,020 | 24.6 | 63 | 5.9 | Clay products (other than pottery) and nonclay refractories. | 1004 |
| 7,851 | 22.1 | 12,056 | 23.0 | 6,069 | 21.3 | 8,594 | 23.1 | 28,509 | 23.5 | 8,394 | 23.1 | 20,205 | 23.6 | 9 | 3.5 | Machine tools | 1307 |
| 9,202 | 19.1 | 12,096 | 21.3 | 8,321 | 19.9 | 10,414 | 23.5 | 42,645 | 23.0 | 14,899 | 19.6 | 27,746 | 25.3 | 15 | 2.7 | Stoves and ranges (other than electric) and warm-air furnaces. | 1121 |
| 4,755 | 17.9 | 6,113 | 17.5 | 3,760 | 19.8 | 4,510 | 21.9 | 35,893 | 28.0 | 6,949 | 24.8 | 28,944 | 28.8 | 563 | 14.6 | Ice, manufactured | 119 |
| 4,179 | 16.7 | 3,580 | 18.7 | 3,874 | 16.8 | 2,939 | 19.6 | 13,799 | 21.8 | 7,324 | 22.8 | 6,475 | 20.8 | 51 | 7.7 | Boxes, wooden, except cigar boxes | 304 |
| 9,172 | 15.8 | 8,948 | 17.3 | 8,268 | 15.9 | 6,845 | 17.4 | 51,827 | 19.9 | 20,435 | 19.2 | 22,392 | 21.1 | 16 | 1.2 | Confectionery | 112 |
| 9,503 | 16.2 | 7,474 | 15.9 | 8,863 | 16.0 | 6,311 | 15.6 | 22,007 | 14.7 | 11,712 | 16.8 | 10,295 | 12.8 | 13 | 2.0 | Silk manufactures | 210 |
| 8,370 | 14.8 | 10,392 | 15.4 | 7,390 | 14.8 | 8,038 | 15.7 | 38,802 | 18.6 | 20,320 | 20.1 | 18,482 | 17.2 | 12 | 1.7 | Stamped and pressed metal products; enameling, japanning, and lacquering. | 1129 |
| 13,008 | 13.1 | 17,664 | 13.1 | 11,141 | 13.5 | 13,873 | 14.2 | 61,157 | 14.6 | 28,649 | 16.6 | 32,508 | 13.2 | 20 | .6 | Machine shops | 1326 |
| 6,037 | 12.6 | 11,776 | 14.2 | 5,187 | 13.2 | 9,057 | 14.9 | 74,187 | 17.7 | 22,703 | 16.2 | 51,484 | 18.4 | 11 | 1.7 | Liquors, malt | 134 |
| 8,398 | 13.3 | 9,651 | 13.8 | 7,390 | 13.4 | 7,582 | 15.0 | 61,913 | 20.7 | 11,455 | 24.6 | 20,458 | 15.7 | 52 | 4.3 | Boxes, paper, not elsewhere classified | 402 |
| 4,225 | 7.4 | 4,195 | 7.3 | 3,703 | 7.7 | 3,416 | 8.1 | 15,952 | 8.1 | 9,503 | 8.7 | 6,449 | 7.4 | 29 | 1.1 | Planing-mill products (including general millwork), made in planing mills not connected with sawmills. | 314 |
| **210 SMALL INDUSTRIES** | | | | | | | | | | | | | | | | | |
| 16,834 | 98.5 | 18,686 | 98.4 | 15,333 | 99.6 | 16,579 | 99.7 | 33,609 | 99.3 | 8,563 | 99.2 | 25,046 | 99.3 | 14 | 70.0 | Typewriters and parts | [3] 1314 |
| [4] 324 | 100.0 | 420 | 100.0 | 256 | 100.0 | 261 | 100.0 | 2,122 | 100.0 | 942 | 100.0 | 1,180 | 100.0 | 9 | 100.0 | Graphite, ground and refined | 1010 |
| 218 | 93.2 | 429 | 95.1 | 158 | 95.2 | 211 | 96.3 | 3,472 | 98.0 | 2,575 | 99.0 | 897 | 95.1 | 8 | 66.7 | Oils, essential | [3] 624 |
| [4] 6,320 | 100.0 | 6,676 | 100.0 | 5,599 | 100.0 | 5,121 | 100.0 | 26,307 | 100.0 | 10,200 | 100.0 | 16,107 | 100.0 | 13 | 100.0 | Ammunition and related products | 602 |
| 265 | 96.0 | 268 | 97.5 | 229 | 96.2 | 189 | 97.9 | 685 | 97.0 | 310 | 98.4 | 375 | 95.9 | 8 | 72.8 | Combs and hairpins, other than metal and rubber. | 1609 |
| 2,395 | 96.2 | 3,017 | 95.4 | 2,277 | 96.9 | 2,562 | 96.7 | 57,273 | 95.0 | 46,324 | 94.9 | 10,949 | 95.6 | 21 | 84.0 | Oil, cake, and meal, linseed | 623 |
| 278 | 87.1 | 284 | 88.8 | 246 | 88.5 | 197 | 87.9 | 1,132 | 89.3 | 586 | 90.9 | 546 | 87.8 | 8 | 42.1 | China firing and decorating, not done in potteries. | [3] 1003 |
| [4] 6,895 | 100.0 | 9,350 | 100.0 | 6,410 | 100.0 | 8,105 | 100.0 | 52,398 | 100.0 | 23,942 | 100.0 | 28,456 | 100.0 | 16 | 100.0 | Asphalted-felt-base floor covering; linoleum. | 222 |
| 1,031 | 97.2 | 1,246 | 97.3 | 789 | 97.5 | 782 | 97.8 | 3,229 | 97.5 | 1,172 | 97.3 | 2,057 | 97.5 | 8 | 57.2 | Safes and vaults | 1115 |
| 483 | 93.2 | 667 | 91.0 | 355 | 94.2 | 357 | 93.9 | 3,167 | 93.6 | 1,320 | 93.3 | 1,847 | 93.9 | 8 | 36.4 | Ink, writing | 619 |
| 3,039 | 91.4 | 3,612 | 91.8 | 2,759 | 91.7 | 2,912 | 95.5 | 8,713 | 94.9 | 2,112 | 94.6 | 6,601 | 95.0 | 10 | 45.5 | Files | 1105 |
| 661 | 93.4 | 940 | 94.2 | 556 | 94.2 | 565 | 94.0 | 5,719 | 96.7 | 3,275 | 96.9 | 2,444 | 96.3 | 12 | 57.1 | Drug grinding | 612 |
| 1,418 | 93.8 | 1,875 | 94.1 | 1,111 | 94.5 | 1,238 | 95.0 | 31,110 | 96.0 | 22,298 | 95.7 | 8,812 | 96.7 | 10 | 71.4 | Oleomargarine, not made in meat-packing establishments. | 124 |
| 8,088 | 93.0 | 10,810 | 93.4 | 7,006 | 93.3 | 8,457 | 93.4 | 20,471 | 90.4 | 5,396 | 89.5 | 14,075 | 84.7 | 9 | 23.1 | Sewing machines and attachments | 1312 |
| 4,790 | 90.7 | 6,797 | 91.1 | 4,178 | 91.4 | 5,251 | 93.0 | 37,845 | 93.1 | 15,807 | 93.0 | 22,038 | 93.1 | 43 | 58.1 | Explosives | 613 |
| 13,256 | 85.8 | 20,086 | 86.7 | 10,370 | 86.4 | 13,921 | 88.1 | 62,821 | 84.9 | 15,325 | 58.6 | 47,496 | 99.3 | 15 | 12.7 | Photographic apparatus and materials and projection apparatus. | 1636 |
| 5,044 | 92.3 | 6,041 | 91.8 | 4,498 | 92.6 | 5,105 | 92.9 | 12,037 | 92.4 | 3,163 | 93.4 | 8,874 | 92.1 | 10 | 45.5 | Firearms | 1106 |
| [4] 19,377 | 100.0 | 19,837 | 100.0 | 17,246 | 100.0 | 16,113 | 100.0 | 53,162 | 100.0 | 20,730 | 100.0 | 32,432 | 100.0 | 12 | 100.0 | Boots and shoes, rubber | 801 |
| 951 | 85.9 | 1,302 | 88.8 | 716 | 88.8 | 878 | 91.0 | 4,660 | 87.2 | 2,098 | 84.9 | 2,562 | 89.3 | 8 | 32.0 | Fire extinguishers, chemical | 1206 |
| 1,817 | 90.6 | 2,203 | 90.7 | 1,664 | 91.0 | 1,777 | 91.7 | 13,615 | 91.9 | 4,879 | 91.5 | 8,736 | 92.2 | 46 | 83.6 | Bone black, carbon black, and lamp black | 606 |
| 4,771 | 83.8 | 6,559 | 80.4 | 3,232 | 85.3 | 3,701 | 81.0 | 36,178 | 86.1 | 9,665 | 86.0 | 26,513 | 86.1 | 262 | 79.1 | Compressed and liquefied gases | 610 |
| 18,330 | 83.0 | 21,139 | 82.4 | 16,115 | 83.6 | 17,103 | 84.1 | 87,060 | 83.7 | 49,215 | 81.2 | 37,845 | 82.9 | 20 | 11.8 | Aluminum products | 1201 |
| 2,976 | 88.3 | 3,070 | 87.1 | 2,711 | 89.1 | 2,485 | 89.5 | 12,612 | 90.2 | 6,442 | 91.8 | 6,170 | 88.6 | 11 | 32.4 | Cork products | 307 |
| 556 | 88.5 | 483 | 88.8 | 492 | 88.3 | 353 | 87.6 | 1,559 | 87.1 | 830 | 86.5 | 729 | 88.5 | 9 | 33.3 | Gold leaf and foil | 1208 |
| 8,002 | 92.9 | 11,130 | 93.7 | 6,807 | 92.8 | 7,934 | 94.0 | 98,469 | 95.0 | 66,608 | 94.8 | 31,861 | 95.5 | 20 | 55.6 | Corn sirup, corn sugar, corn oil, and starch | 113 |
| 2,184 | 84.1 | 2,750 | 88.2 | 2,001 | 86.4 | 2,222 | 91.9 | 46,499 | 97.4 | 14,364 | 95.9 | 32,135 | 98.0 | 9 | 34.6 | Chewing gum | 108 |
| 1,161 | 78.6 | 1,829 | 78.6 | 867 | 79.1 | 1,146 | 79.8 | 6,603 | 80.4 | 3,341 | 81.0 | 3,262 | 79.8 | 12 | 25.0 | Soda fountains and accessories | 1641 |
| 689 | 86.2 | 972 | 89.3 | 539 | 85.8 | 565 | 88.1 | 3,286 | 89.2 | 1,765 | 90.7 | 1,531 | 87.6 | 9 | 56.2 | Cardboard, not made in paper mills | 403 |
| 3,186 | 76.7 | 3,961 | 75.6 | 2,673 | 78.0 | 2,923 | 78.3 | 10,413 | 76.3 | 3,145 | 75.9 | 7,268 | 76.5 | 15 | 18.3 | Saws | 1116 |
| 2,030 | 85.9 | 2,631 | 85.7 | 1,734 | 86.0 | 2,022 | 86.8 | 5,635 | 80.7 | 2,103 | 76.2 | 3,532 | 83.6 | 8 | 27.6 | Watchcases | 1222 |
| 8,859 | 80.6 | 9,130 | 78.8 | 7,920 | 82.3 | 7,585 | 81.6 | 29,921 | 78.4 | 13,692 | 79.6 | 16,259 | 77.4 | 19 | 26.4 | Asbestos products other than steam packing, pipe, and boiler covering. | 1001 |
| 3,101 | 79.6 | 3,536 | 78.3 | 2,718 | 81.3 | 2,833 | 82.2 | 22,723 | 86.1 | 7,623 | 85.5 | 15,100 | 86.9 | 42 | 58.3 | Gypsum products | 1022 |
| 4,900 | 84.1 | 5,626 | 82.7 | 3,997 | 82.5 | 3,880 | 82.1 | 182,643 | 85.9 | 153,630 | 86.3 | 29,013 | 83.4 | 31 | 64.6 | Shortenings, vegetable cooking oils and salad oils. | 120 |
| 4,797 | 87.3 | 4,755 | 86.6 | 4,478 | 88.2 | 4,152 | 88.5 | 27,789 | 91.3 | 17,646 | 92.7 | 10,143 | 89.0 | 15 | 62.5 | Matches | 312 |
| 8,473 | 71.9 | 11,195 | 75.3 | 6,808 | 70.4 | 7,792 | 75.4 | 23,739 | 70.7 | 6,818 | 61.6 | 16,921 | 75.1 | 13 | 13.0 | Optical goods | 1631 |
| 8,189 | 72.5 | 8,978 | 72.0 | 7,311 | 72.4 | 6,955 | 73.3 | 25,018 | 76.2 | 6,582 | 70.9 | 18,436 | 78.3 | 9 | 18.0 | Needles, pins, hooks and eyes, and slide and snap fasteners. | 1211 |
| 12,830 | 84.1 | 15,004 | 87.3 | 11,609 | 83.9 | 12,158 | 87.4 | 333,122 | 88.3 | 295,772 | 88.0 | 37,350 | 91.0 | 14 | 77.8 | Sugar refining, cane | 131 |
| 6,160 | 70.9 | 9,433 | 73.7 | 4,814 | 71.0 | 6,454 | 77.3 | 39,291 | 72.9 | 13,910 | 67.1 | 25,381 | 76.6 | 9 | 9.6 | Abrasive wheels, stones, paper, and cloth, and related products. | 1021 |
| 18,928 | 77.1 | 24,317 | 76.6 | 16,687 | 77.7 | 20,059 | 77.9 | 84,473 | 84.0 | 53,792 | 87.2 | 30,681 | 79.0 | 72 | 48.0 | Cars, electric and steam railroad | 1405 |
| 7,243 | 77.2 | 7,763 | 74.9 | 6,458 | 77.9 | 6,156 | 77.0 | 72,144 | 77.5 | 52,026 | 78.3 | 20,118 | 75.5 | 8 | 18.2 | Chocolate and cocoa products, not including confectionery. | 109 |
| 6,851 | 74.4 | 8,706 | 75.5 | 6,085 | 77.1 | 6,963 | 81.7 | 120,562 | 82.2 | 65,054 | 78.9 | 55,508 | 86.4 | 15 | 13.6 | Cereal preparations | 106 |
| 2,760 | 82.3 | 5,403 | 85.4 | 2,202 | 82.6 | 3,679 | 86.0 | 25,650 | 79.3 | 10,833 | 75.2 | 14,817 | 82.6 | 15 | 32.6 | Baking powder, yeast, and other leavening compounds. | 603 |
| 2,021 | 75.8 | 2,534 | 72.4 | 1,703 | 77.4 | 1,798 | 73.4 | 5,773 | 75.4 | 2,371 | 87.9 | 3,402 | 68.5 | 8 | 8.0 | Engraving, chasing, etching, and diesinking. | 503 |
| 12,368 | 72.5 | 16,173 | 72.2 | 10,394 | 74.7 | 12,038 | 78.5 | 198,804 | 83.1 | 114,921 | 82.4 | 83,883 | 84.1 | 24 | 10.1 | Soap | 631 |
| 9,181 | 85.0 | 10,906 | 87.0 | 7,844 | 85.0 | 8,201 | 87.8 | 85,081 | 89.4 | 64,082 | 90.1 | 20,999 | 87.4 | 62 | 80.5 | Sugar, beet | 129 |
| 3,632 | 79.5 | 3,767 | 79.0 | 3,014 | 79.7 | 2,763 | 80.6 | 14,777 | 82.6 | 4,167 | 72.1 | 10,610 | 87.7 | 8 | 15.6 | Pens, fountain and stylographic; pen points, gold, steel, and brass. | 1634 |

TABLE I.—*Concentration in manufacturing industries,*

[Values in thou

| Industry number | Industry | Largest four producers | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Persons employed | | Wages and salaries | | Wage earners | | Wages | | Value of product | | Cost of materials, etc.[1] | | Value added by manufacture[2] | | Number of establishments | |
| | | Number | Percent of industry | Amount | Percent of industry | Number | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Number | Percent of industry |
| | | 210 SMALL INDUSTRIES—Continued | | | | | | | | | | | | | | | |
| 1637 | Pipes (tobacco) | 1,475 | 60.6 | 1,701 | 62 3 | 1,372 | 61.2 | 1,480 | 64.9 | 3,812 | 61.7 | 1,122 | 57.8 | 2,690 | 63.5 | 5 | 17.2 |
| 605 | Bluing | 58 | 59 2 | 125 | 78.1 | 34 | 58.6 | 41 | 74.5 | 776 | 85.1 | 224 | 78.3 | 552 | 88 2 | 6 | 40.0 |
| 1409 | Motorcycles, bicycles, and parts | 3,402 | 58.9 | 4,044 | 61 6 | 2,957 | 58.1 | 3,248 | 62.3 | 13,640 | 59.0 | 7,293 | 56.9 | 6,347 | 61.8 | 6 | 26.1 |
| 607 | Candles | 520 | 57.8 | 616 | 57.2 | 419 | 58 8 | 353 | 58 9 | 2,877 | 60.8 | 1,432 | 59 7 | 1,445 | 61.9 | 4 | 17.4 |
| 615 | Fireworks and allied products | 1,075 | 57 8 | 1,150 | 55.8 | 944 | 59 4 | 765 | 58 4 | 3,333 | 51.2 | 1,413 | 53.8 | 1,920 | 49 6 | 10 | 19.3 |
| 1110 | Blast-furnace products | 9,623 | 57 6 | 13,226 | 58.2 | 8,703 | 57 4 | 10,811 | 57.2 | 235,579 | 62.9 | 191,943 | 63 9 | 43,636 | 58 9 | 30 | 41.7 |
| 1218 | Smelting and refining, zinc | 5,464 | 56.5 | 7,441 | 59 6 | 4,937 | 55.8 | 5,986 | 58 0 | 41,617 | 60 2 | 26,082 | 59.9 | 15,535 | 60.7 | 9 | 34 6 |
| 220 | Artificial leather; oil cloth | 2,431 | 56.4 | 3,099 | 55.4 | 2,059 | 56.4 | 2,415 | 57 5 | 19,814 | 57 7 | 13,209 | 57.0 | 6,605 | 59.3 | 7 | 21.2 |
| 1629 | Musical instruments: Organs | 422 | 55.7 | 495 | 54 7 | 359 | 58 5 | 339 | 55.5 | 911 | 53.7 | 310 | 53 8 | 601 | 53 5 | 4 | 14 3 |
| 2051 | Felt goods, except woven felts | 2,212 | 55.7 | 2,413 | 54.7 | 2,052 | 57 4 | 2,015 | 58.6 | 14,530 | 61.3 | 8,090 | 59.9 | 6,440 | 63 1 | 9 | 22.5 |
| 1611 | Dentists' equipment and supplies | 2,493 | 55 6 | 3,087 | 52.6 | 2,104 | 59 8 | 2,222 | 61.2 | 11,542 | 50.3 | 3,097 | 34.0 | 8,445 | 61.0 | 7 | 8 0 |
| 1020 | Wallboard and plaster, building insulation, floor composition. | 2,972 | 55.2 | 2,684 | 48.4 | 2,666 | 57.7 | 2,103 | 53.4 | 12,878 | 54.0 | 3,940 | 43 9 | 8,938 | 60.1 | 5 | 4.0 |
| 1315 | Washing machines, wringers, driers, and ironing machines. | 5,492 | 53 5 | 7,381 | 58.5 | 4,639 | 53 0 | 5,926 | 60.2 | 34,879 | 55.9 | 20,147 | 54 4 | 14,732 | 57.9 | 6 | 14.6 |
| 1630 | Muscial instruments: Pianos | 2,435 | 53 0 | 2,611 | 53 2 | 2,195 | 53 4 | 2,170 | 53 0 | 6,477 | 51.1 | 2,242 | 40 0 | 4,235 | 59.7 | 4 | 11.1 |
| 308 | Excelsior | 474 | 52.2 | 401 | 59 4 | 438 | 52 7 | 313 | 58 8 | 1,591 | 65.1 | 612 | 59 4 | 979 | 69 3 | 9 | 18.8 |
| 1647 | Tobacco (chewing and smoking) and snuff | 5,739 | 51 9 | 4,834 | 46 3 | 5,378 | 53 4 | 4,091 | 53 6 | 75,396 | 55.7 | 54,760 | 60.9 | 20,636 | 45.3 | 8 | 7 0 |
| 1644 | Steam and other packing, pipe and boiler covering, gaskets, n. e. c. | 2,965 | 51.5 | 3,310 | 46.9 | 2,576 | 53.9 | 2,492 | 52.6 | 11,367 | 46.9 | 5,807 | 49.4 | 5,560 | 44 5 | 9 | 7.3 |
| 1113 | Nails, spikes, etc | 1,290 | 51.5 | 1,530 | 50.2 | 1,160 | 53.2 | 1,263 | 54.4 | 4,669 | 48 3 | 2,015 | 46.6 | 2,654 | 49.8 | 6 | 14 0 |
| 1645 | Surgical and orthopedic appliances and related products. | 4,727 | 50.6 | 5,319 | 49.4 | 3,700 | 52.2 | 3,163 | 50.3 | 41,293 | 66.9 | 28,020 | 77.6 | 13,273 | 51.7 | 10 | 3.3 |
| 1213 | Silverware and plated ware | 5,980 | 50.4 | 6,879 | 48 3 | 5,162 | 50.6 | 5,633 | 50.8 | 24,524 | 56 6 | 7,296 | 47 9 | 17,228 | 61.2 | 9 | 6.5 |
| 133 | Liquors, distilled | 4,814 | 50.0 | 5,027 | 44 4 | 4,395 | 53 9 | 4,387 | 52 5 | 77,937 | 51 0 | 38,533 | 50.4 | 39,404 | 51 6 | 15 | 11 4 |
| 1203 | Collapsible tubes | 1,066 | 49 9 | 1,191 | 51.6 | 1,002 | 51 0 | 972 | 55 5 | 4,147 | 48 8 | 2,496 | 50 3 | 1,651 | 46.6 | 4 | 25 0 |
| 310 | Lasts and related products | 870 | 49 8 | 1,219 | 47 5 | 766 | 51 2 | 996 | 52 1 | 2,787 | 50 5 | 724 | 49 7 | 2,063 | 50.8 | 13 | 27 1 |
| 1403 | Carriages and sleds, children's | 2,680 | 49 1 | 2,797 | 51 7 | 2,491 | 50.6 | 2,471 | 56.6 | 7,302 | 47.0 | 3,473 | 46.8 | 3,829 | 47.3 | 6 | 10.9 |
| 1209 | Gold, silver, and platinum, refining and alloying. | 744 | 49.1 | 1,195 | 45.1 | 545 | 54.4 | 663 | 50.3 | 50,168 | 64.3 | 47,746 | 66.5 | 2,422 | 38.6 | 5 | 3.7 |
| 1654 | Wool pulling | 461 | 48.5 | 555 | 45.0 | 419 | 48.4 | 461 | 47.3 | 5,481 | 44 2 | 4,207 | 46.7 | 1,274 | 37.5 | 4 | 23.5 |
| 1627 | Musical-instrument parts and materials: Piano and organ | 667 | 48.4 | 627 | 43.0 | 616 | 50.6 | 480 | 46.6 | 1,254 | 39.4 | 495 | 40.5 | 759 | 38.7 | 4 | 11.8 |
| 1311 | Scales and balances | 1,576 | 48 2 | 2,033 | 48.5 | 1,179 | 47.8 | 1,254 | 47.6 | 6,919 | 51.7 | 1,854 | 49.0 | 5,065 | 52.7 | 5 | 8.9 |
| 1401 | Aircraft and parts | 7,131 | 47 8 | 11,280 | 52.5 | 5,436 | 47.8 | 8,211 | 55.2 | 24,435 | 53.9 | 7,681 | 54.8 | 16,754 | 53.5 | 8 | 10.1 |
| 633 | Wood distillation and charcoal manufacture. | 2,050 | 47.5 | 1,961 | 52.1 | 1,776 | 46.6 | 1,443 | 51.3 | 8,555 | 53.5 | 3,663 | 46.2 | 4,892 | 60.8 | 7 | 11.6 |
| 404 | Card cutting and designing | 1,655 | 47.3 | 1,981 | 49.3 | 1,447 | 49 0 | 1,534 | 53 9 | 11,061 | 64.2 | 5,233 | 68 0 | 5,828 | 61.2 | 5 | 6.6 |
| 630 | Salt | 2,619 | 47.2 | 3,255 | 50.9 | 2,352 | 47 3 | 2,588 | 53.0 | 17,920 | 60.3 | 6,413 | 58.7 | 11,507 | 61 2 | 15 | 31 3 |
| 1633 | Pencils, lead (including mechanical), and crayons. | 2,857 | 46.9 | 3,098 | 49.0 | 2,451 | 47.3 | 2,187 | 51.6 | 8,973 | 44.9 | 3,740 | 45.3 | 5,233 | 44.6 | 5 | 10.6 |
| 1202 | Clocks, watches, time-recording devices, materials, parts. | 9,412 | 46.4 | 10,006 | 44.3 | 8,712 | 48.3 | 8,536 | 46.7 | 20,548 | 33.6 | 6,101 | 27.1 | 14,447 | 37.4 | 5 | 6.6 |
| 1638 | Roofing, built-up and roll; asphalt shingles; roof coatings. | 3,414 | 46.4 | 3,878 | 44.6 | 3,051 | 47.1 | 3,053 | 45.7 | 32,581 | 42.8 | 18,310 | 42.6 | 14,271 | 43.0 | 20 | 18.5 |
| 1018 | Sand-lime brick | 124 | 46.1 | 145 | 54.1 | 110 | 48.5 | 113 | 56.8 | 413 | 63.1 | 185 | 68.5 | 228 | 59.2 | 4 | 20.0 |
| 2171 | Gloves and mittens, cloth or cloth and leather combined. | 3,868 | 46.0 | 2,135 | 41.5 | 3,781 | 47.0 | 2,011 | 44.8 | 8,323 | 43.9 | 4,631 | 45.0 | 3,692 | 42.7 | 22 | 19.2 |
| 411 | Wall paper | 2,242 | 45.9 | 2,479 | 41.4 | 2,012 | 47.2 | 2,023 | 45.1 | 8,068 | 41.0 | 4,150 | 42.0 | 3,918 | 40.1 | 8 | 20.0 |
| 1217 | Smelting and refining, nonferrous metals other than silver, gold, and platinum. | 2,075 | 45.8 | 2,427 | 40.1 | 1,747 | 48.4 | 1,674 | 73.1 | 25,979 | 41.5 | 20,868 | 40.1 | 5,111 | 48.1 | 16 | 16.1 |
| 1603 | Artists' materials | 238 | 45.3 | 309 | 43.4 | 150 | 42.9 | 139 | 41.3 | 1,234 | 50.8 | 738 | 60.4 | 496 | 41.0 | 4 | 8.5 |
| 2173 | Suspenders, garters, and other elastic woven products. | 1,324 | 45.0 | 1,372 | 48.5 | 1,209 | 44.5 | 888 | 45.4 | 8,034 | 54.8 | 4,368 | 51.4 | 3,666 | 59.5 | 4 | 5.4 |
| 1120 | Steel barrels, kegs, and drums | 2,898 | 44.7 | 3,218 | 42.2 | 2,646 | 45.9 | 2,667 | 45.7 | 12,829 | 37 0 | 7,455 | 35.4 | 5,374 | 39.5 | 7 | 10.9 |
| 1632 | Paving materials: Blocks and mixtures | 1,181 | 44.4 | 1,642 | 46.0 | 1,136 | 50 9 | 1,503 | 59.8 | 7,962 | 44.5 | 4,689 | 47.0 | 3,273 | 41.4 | 26 | 19.7 |
| 111 | Condensed and evaporated milk | 4,358 | 44.1 | 4,485 | 41.1 | 3,859 | 45.6 | 3,618 | 43 5 | 73,218 | 42.7 | 53,956 | 41.2 | 19,262 | 47.5 | 168 | 36.0 |
| 122 | Malt | 750 | 43 7 | 1,505 | 42.0 | 644 | 44 8 | 1,040 | 44.3 | 33,536 | 44 6 | 25,255 | 44.8 | 8,281 | 44 3 | 13 | 24.1 |
| 1617 | Hair work | 270 | 43 7 | 361 | 46.6 | 228 | 45.5 | 178 | 40.7 | 1,200 | 43.8 | 303 | 29.1 | 897 | 52.9 | 4 | 9.3 |
| 1404 | Carriages, wagons, sleighs, and sleds | 798 | 42 9 | 788 | 44.6 | 688 | 43.2 | 576 | 44 8 | 3,052 | 44 6 | 1,603 | 43.6 | 1,449 | 45.9 | 4 | 8.9 |
| 1108 | Galvanizing and other coating | 598 | 42 6 | 760 | 40.4 | 549 | 45.7 | 480 | 37 8 | 1,791 | 34 5 | 471 | 23.5 | 1,320 | 41.4 | 4 | 6 2 |
| 1128 | Wrought pipe, welded and heavy riveted | 5,021 | 42.6 | 6,301 | 42.8 | 4,671 | 43.6 | 5,377 | 45 6 | 34,710 | 47.0 | 20,152 | 48 0 | 14,558 | 45 7 | 8 | 16.7 |
| 1616 | Furs, dressed and dyed | 2,997 | 42.6 | 4,022 | 41.9 | 2,890 | 44 9 | 3,355 | 44 4 | 6,486 | 30 4 | 1,762 | 27.1 | 4,724 | 31.9 | 7 | 4 2 |
| 1622 | Jewelry and instrument cases | 1,088 | 42.5 | 1,105 | 42.1 | 998 | 43.1 | 842 | 42.5 | 2,214 | 34 8 | 693 | 29.5 | 1,521 | 37.9 | 4 | 5.5 |
| 618 | Ink, printing | 1,405 | 42 0 | 2,318 | 37.9 | 1,057 | 44 6 | 1,429 | 44 2 | 16,500 | 47 8 | 10,131 | 54 5 | 6,369 | 39 9 | 41 | 21.5 |
| 1623 | Lapidary work | 85 | 41.9 | 132 | 44.8 | 72 | 47 0 | 96 | 47.7 | 507 | 24.7 | 291 | 23.5 | 216 | 26 6 | 4 | 6.7 |
| 616 | Glue and gelatin | 1,633 | 41 8 | 2,038 | 39.3 | 1,446 | 44 4 | 1,570 | 44 4 | 10,177 | 36.1 | 4,845 | 32.1 | 5,332 | 40.7 | 12 | 16.2 |
| 701 | Coke-oven products | 7,682 | 41.7 | 10,451 | 40.6 | 6,870 | 41.2 | 8,543 | 39 6 | 116,463 | 48.8 | 90,908 | 50.4 | 25,555 | 43.9 | 20 | 22.7 |
| 136 | Liquors, rectified or blended | 2,974 | 41 6 | 2,324 | 34.5 | 2,860 | 48.6 | 2,135 | 47.2 | 41,873 | 42 2 | 20,532 | 36.2 | 21,341 | 50.3 | 6 | 2 3 |
| 127 | Rice cleaning and polishing | 1,061 | 40.7 | 980 | 36.8 | 825 | 40.7 | 468 | 35.7 | 16,131 | 36 6 | 11,887 | 34.7 | 4,244 | 42 9 | 17 | 25 0 |
| 1118 | Springs, steel, except wire | 1,460 | 40.6 | 1,969 | 42.7 | 1,357 | 43.1 | 1,674 | 46.9 | 9,774 | 53 6 | 6,640 | 60.1 | 3,134 | 43.6 | 4 | 8 2 |
| 303 | Boxes, cigar, wooden and part wooden | 1,355 | 40.2 | 973 | 38 3 | 1,312 | 41.3 | 809 | 40.5 | 2,517 | 40.9 | 817 | 36.7 | 1,700 | 43 2 | 11 | 15.3 |
| 1628 | Musical instruments and parts and materials, n. e. c. | 1,394 | 39.6 | 1,739 | 41.2 | 1,080 | 37.7 | 1,197 | 39.8 | 3,514 | 38.8 | 844 | 30.9 | 2,670 | 42.2 | 4 | 4 3 |
| 132 | Vinegar and cider | 500 | 39 5 | 606 | 40.3 | 435 | 42 0 | 432 | 43.1 | 3,440 | 40.4 | 2,054 | 43.2 | 1,386 | 36.9 | 26 | 20.8 |
| 1653 | Beauty-shop equipment, except furniture | 1,039 | 39 0 | 1,146 | 37.5 | 875 | 40.2 | 717 | 36.4 | 3,571 | 28 5 | 1,562 | 31.1 | 2,009 | 26.8 | 4 | 4 9 |
| 319 | Wood preserving | 3,816 | 38 8 | 2,909 | 35.0 | 3,633 | 40 4 | 2,562 | 38.6 | 40,599 | 50 5 | 32,184 | 53.9 | 8,415 | 40.8 | 55 | 29 7 |
| 1614 | Foundry supplies | 222 | 38 4 | 409 | 44.5 | 150 | 37.5 | 187 | 41.9 | 1,850 | 28.4 | 836 | 24.3 | 1,014 | 33 0 | 7 | 15.2 |
| 1649 | Umbrellas, parasols, and canes | 922 | 37.9 | 842 | 37.1 | 860 | 39 3 | 655 | 38.3 | 2,959 | 29.3 | 1,435 | 23.4 | 1,524 | 38 6 | 4 | 1 8 |
| 1224 | Jewelers' findings and materials | 1,169 | 37.7 | 1,312 | 33.9 | 1,064 | 40 0 | 1,039 | 38.1 | 4,146 | 24.2 | 2,200 | 20.1 | 1,946 | 31.3 | 4 | 5.5 |
| 1313 | Textile machinery and parts | 8,342 | 36 8 | 10,255 | 34 5 | 7,280 | 38 2 | 8,007 | 37 7 | 18,487 | 26.9 | 7,405 | 32.0 | 11,082 | 24.2 | 6 | 1.7 |
| 625 | Oils not elsewhere classified | 831 | 36.7 | 1,084 | 36.9 | 692 | 39 1 | 785 | 43 3 | 17,028 | 40.8 | 10,671 | 36.9 | 6,357 | 49.7 | 10 | 9.5 |
| 1607 | Carbon paper and inked ribbons | 716 | 36 6 | 1,080 | 35.9 | 524 | 36.8 | 571 | 35 0 | 4,861 | 33.1 | 2,676 | 35.7 | 2,185 | 30.4 | 4 | 7 1 |
| 1126 | Wire drawn from purchased rods | 8,761 | 36.2 | 11,592 | 37.7 | 8,135 | 37.8 | 9,892 | 40.5 | 51,262 | 40.2 | 28,396 | 41.5 | 22,866 | 38.8 | 15 | 17.0 |

For footnotes, see end of table.

*1935, based on number of persons employed*—Continued

sands of dollars)

| Persons employed | | Wages and salaries | | Wage earners | | Wages | | Value of product | | Cost of materials, etc | | Value added by manufacture | | Number of establishments | | Industry | Industry number |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Number | Percent of industry | Amount | Percent of industry | Number | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Number | Percent of industry | | |
| Largest eight producers | | | | | | | | | | | | | | | | | |
| 210 SMALL INDUSTRIES—Continued | | | | | | | | | | | | | | | | | |
| 1,907 | 78 4 | 2 237 | 82 3 | 1 791 | 78 6 | 1,894 | 83 0 | 5,001 | 81 0 | 1,561 | 77 3 | 3,503 | 82 7 | 9 | 31 0 | Pipes (tobacco | 1637 |
| 498 | 100 0 | 1 0 | 100 0 | 78 | 100 0 | 75 | 100 0 | 912 | 100 0 | 286 | 100 0 | 626 | 100 0 | 15 | 100 0 | Bluing | 605 |
| 4,693 | 81 3 | 5 414 | 82 5 | 4 126 | 81 0 | 4,366 | 83 7 | 19,395 | 84 4 | 10,969 | 85 6 | 8,526 | 84 0 | 10 | 43 5 | Motorcycles, bicycles, and parts | 1409 |
| 697 | 77 4 | 873 | 81 1 | 553 | 77 6 | 485 | 81 0 | 3,895 | 82 3 | 1,936 | 80 7 | 1,959 | 83 9 | 8 | 34 8 | Candles | 607 |
| 1,410 | 75 8 | 1,558 | 75 6 | 1,234 | 77 7 | 1,017 | 77 7 | 4,972 | 76 4 | 2,007 | 76 4 | 2,965 | 79 5 | 20 | 38 5 | Fireworks and allied products | 615 |
| 12,071 | 72 3 | 16,976 | 74 6 | 11,012 | 72 6 | 14,166 | 74 9 | 310,230 | 82 8 | 250,691 | 83 4 | 59,539 | 80 4 | 40 | 55 5 | Blast-furnace products | 1110 |
| 7,653 | 79 1 | 10,193 | 81 6 | 6,982 | 79 0 | 8,386 | 81 3 | 56,821 | 82 2 | 36,114 | 82 9 | 20,707 | 81 0 | 15 | 57 7 | Smelting and refining, zinc | 1218 |
| 3,186 | 73 9 | 4,083 | 72 9 | 2,737 | 73 0 | 3,218 | 76 6 | 25,872 | 75 4 | 17,819 | 76 9 | 8,053 | 72 3 | 11 | 33 3 | Artificial leather; oil cloth | 220 |
| 503 | 78 3 | 721 | 79 6 | 389 | 79 6 | 400 | 80 2 | 1,316 | 77 5 | 448 | 77 8 | 868 | 77 3 | 8 | 28 6 | Musical instruments: Organs | 1629 |
| 3,071 | 77 3 | 3,372 | 76 5 | 2,813 | 78 7 | 2,728 | 79 3 | 19,193 | 81 0 | 10,759 | 79 7 | 8,434 | 82 7 | 14 | 35 0 | Felt goods, except woven felts | 2051 |
| 3,084 | 68 7 | 3,881 | 66 1 | 2,573 | 73 2 | 2,679 | 73 8 | 13,885 | 60 5 | 3,734 | 41 6 | 10,151 | 73 3 | 12 | 13 8 | Dentists' equipment and supplies | 1611 |
| 3,832 | 71 1 | 3,787 | 68 3 | 3,427 | 74 2 | 2,958 | 75 1 | 16,716 | 70 1 | 5,412 | 60 6 | 11,274 | 75 8 | 9 | 7 3 | Wallboard and plaster, building insulation, floor composition. | 1020 |
| 7,922 | 77 1 | 10,163 | 80 6 | 6,795 | 77 7 | 8,127 | 82 5 | 49,726 | 79 7 | 29,567 | 79 9 | 20,159 | 79 3 | 11 | 26 8 | Washing machines, wringers, driers, and ironing machines. | 1315 |
| 3,264 | 73 2 | 3,644 | 71 2 | 3,099 | 73 2 | 3,076 | 75 2 | 9,617 | 75 8 | 3,988 | 71 2 | 5,629 | 79 4 | 8 | 22 2 | Musical instruments: Pianos | 1630 |
| 564 | 62 1 | 480 | 71 1 | 515 | 62 0 | 374 | 70 3 | 1,867 | 76 4 | 741 | 71 9 | 1,126 | 79 7 | 13 | 27 1 | Excelsior | 308 |
| 8,067 | 73 0 | 7,065 | 73 4 | 7,112 | 73 6 | 5,929 | 77 7 | 114,197 | 81 3 | 76,276 | 81 8 | 37,921 | 83 3 | 16 | 13 9 | Tobacco (chewing and smoking) and snuff | 1647 |
| 3,782 | 65 7 | 4,221 | 59 8 | 3,309 | 69 3 | 3,219 | 67 9 | 15,159 | 62 5 | 7,886 | 67 1 | 7,273 | 58 2 | 14 | 11 3 | Steam and other packing, pipe and boiler covering, gaskets, n. e. c. | 1611 |
| 1,631 | 65 1 | 2,023 | 66 3 | 1,445 | 66 3 | 1,596 | 68 8 | 6,125 | 63 4 | 2,604 | 60 2 | 3,521 | 66 1 | 10 | 23 3 | Nails, spikes, etc | 1113 |
| 5,456 | 58 4 | 6,233 | 57 9 | 4,207 | 59 3 | 3,638 | 57 9 | 46,388 | 75 1 | 30,044 | 83 2 | 16,344 | 63 7 | 15 | 4 9 | Surgical and orthopedic appliances and related products. | 1645 |
| 7,411 | 62 5 | 8,610 | 60 5 | 6,392 | 62 7 | 6,805 | 61 4 | 29,484 | 68 0 | 9,326 | 61 2 | 20,158 | 71 6 | 13 | 9 4 | Silverware and plated ware | 1213 |
| 6,250 | 61 9 | 6,832 | 60 3 | 5,574 | 68 1 | 5,759 | 68 9 | 109,203 | 71 4 | 53,329 | 69 7 | 55,874 | 73 1 | 19 | 14 5 | Liquors, distilled | 133 |
| 1,685 | 78 8 | 1 842 | 79 8 | 1,556 | 79 3 | 1,427 | 81 5 | 6,749 | 79 4 | 3,973 | 80 0 | 2,776 | 78 4 | 8 | 50 0 | Collapsible tubes | 1203 |
| 1,107 | 63 4 | 1,040 | 64 7 | 956 | 63 9 | 1,257 | 65 8 | 3,714 | 67 3 | 952 | 65 3 | 2,762 | 68 0 | 17 | 35 1 | Lasts and related products | 310 |
| 3,428 | 62 8 | 3,581 | 66 2 | 3,179 | 64 6 | 3,041 | 69 7 | 9,979 | 64 3 | 4,742 | 63 9 | 5,237 | 63 7 | 10 | 18 2 | Carriages and sleds, children's | 1403 |
| 891 | 58 8 | 1,107 | 55 4 | 619 | 61 8 | 768 | 58 3 | 61,955 | 79 4 | 58,414 | 84 4 | 3,541 | 56 5 | 9 | 10 2 | Gold, silver, and platinum, refining and alloying. | 1209 |
| 721 | 75 8 | 930 | 75 4 | 662 | 76 4 | 777 | 79 7 | 9,759 | 78 7 | 7,452 | 82 7 | 2,307 | 68 0 | 8 | 47 0 | Wool pulling | 1654 |
| 1,005 | 73 0 | 1,067 | 69 1 | 925 | 76 0 | 717 | 72 6 | 2,157 | 67 7 | 811 | 66 3 | 1,346 | 68 6 | 8 | 23 6 | Musical-instrument parts and materials. Piano and organ. | 1627 |
| 2,149 | 65 7 | 2,830 | 67 5 | 1,591 | 64 5 | 1,720 | 65 3 | 9,751 | 72 9 | 2,626 | 69 4 | 7,125 | 74 2 | 9 | 16 1 | Scales and balances | 1311 |
| 9,851 | 66 0 | 15,362 | 71 5 | 7,118 | 65 2 | 10,884 | 73 1 | 33,008 | 72 8 | 10,127 | 72 3 | 22,881 | 73 0 | 13 | 16 4 | Aircraft and parts | 1401 |
| 2,783 | 64 5 | 2,474 | 65 8 | 2,165 | 64 7 | 1,861 | 66 1 | 10,592 | 66 3 | 4,705 | 59 4 | 5,887 | 73 2 | 11 | 18 3 | Wood distillation and charcoal manufacture. | 633 |
| 2,167 | 61 9 | 2,609 | 64 9 | 1,829 | 62 0 | 1,919 | 67 4 | 13,377 | 77 7 | 6,168 | 80 1 | 7,209 | 75 7 | 10 | 13 2 | Card cutting and designing | 104 |
| 3,719 | 67 0 | 1,203 | 65 7 | 3,348 | 67 3 | 3,295 | 67 5 | 23,254 | 78 2 | 8,309 | 76 0 | 14,945 | 79 5 | 20 | 11 7 | Salt | 630 |
| 4,201 | 68 9 | 4,543 | 71 8 | 3,551 | 68 5 | 3,062 | 72 3 | 13,338 | 66 7 | 5,327 | 64 5 | 8,011 | 68 2 | 9 | 19 1 | Pencils, lead (including mechanical), and crayons. | 1633 |
| 13,819 | 68 1 | 14,794 | 65 5 | 12,464 | 69 1 | 12,291 | 67 2 | 36,141 | 59 1 | 13,679 | 60 7 | 22,462 | 58 1 | 12 | 15 8 | Clocks, watches, time-recording devices, materials, parts. | 1202 |
| 4,993 | 67 8 | 5,787 | 66 6 | 4,544 | 70 1 | 4,768 | 71 3 | 51,929 | 68 2 | 29,992 | 69 8 | 21,937 | 66 1 | 29 | 26 8 | Roofing, built-up and roll; asphalt shingles; roof coatings. | 1638 |
| 188 | 69 9 | 198 | 73 9 | 161 | 72 2 | 148 | 74 4 | 518 | 79 2 | 222 | 82 2 | 296 | 76 9 | 8 | 40 0 | Sand-lime brick | 1018 |
| 4,872 | 57 9 | 2,715 | 52 8 | 4,747 | 59 0 | 2,494 | 55 6 | 10,198 | 53 8 | 5,636 | 54 8 | 4,559 | 52 7 | 27 | 23 5 | Gloves and mittens, cloth or cloth and leather combined. | 2171 |
| 3,043 | 62 3 | 3,197 | 58 5 | 2,680 | 63 1 | 2,751 | 61 4 | 11,571 | 58 9 | 5,986 | 60 5 | 5,588 | 57 2 | 12 | 30 0 | Wall paper | 411 |
| 2,540 | 56 1 | 3,127 | 51 7 | 2,118 | 58 7 | 2,074 | 90 5 | 38,081 | 60 8 | 31,655 | 60 9 | 6,426 | 60 5 | 20 | 20 2 | Smelting and refining, nonferrous metals other than silver, gold, and platinum. | 1217 |
| 296 | 56 3 | 146 | 62 6 | 189 | 54 0 | 191 | 56 7 | 1,631 | 67 2 | 876 | 71 7 | 758 | 62 7 | 8 | 17 0 | Artists' materials | 1603 |
| 1,908 | 60 3 | 1,792 | 63 3 | 1,629 | 59 9 | 1,163 | 59 5 | 9,637 | 65 7 | 5,316 | 62 6 | 4,321 | 70 1 | 8 | 10 8 | Suspenders, garters, and other elastic woven products. | 2173 |
| 4,107 | 63 4 | 4,688 | 61 5 | 3,686 | 64 0 | 3,714 | 63 6 | 19,724 | 56 9 | 11,636 | 55 3 | 8,088 | 59 4 | 18 | 28 1 | Steel barrels, kegs, and drums | 1120 |
| 1,622 | 61 0 | 2,116 | 59 3 | 1,196 | 67 1 | 1,814 | 72 2 | 10,775 | 60 2 | 6,161 | 61 7 | 4,614 | 58 4 | 45 | 34 1 | Paving materials: Blocks and mixtures | 1632 |
| 5,912 | 59 8 | 6,024 | 55 2 | 5,222 | 61 7 | 4,821 | 58 0 | 107,514 | 62 7 | 83,466 | 63 7 | 24,048 | 59 3 | 212 | 45 1 | Condensed and evaporated milk | 111 |
| 1,042 | 60 7 | 2,188 | 61 1 | 878 | 61 0 | 1,412 | 60 1 | 49,208 | 65 5 | 37,713 | 66 9 | 11,495 | 61 5 | 18 | 33 3 | Malt | 122 |
| 374 | 60 5 | 477 | 61 5 | 310 | 61 8 | 236 | 56 2 | 1,745 | 63 7 | 618 | 59 4 | 1,127 | 66 4 | 8 | 18 6 | Hair work | 1617 |
| 1,121 | 60 3 | 1,116 | 63 2 | 960 | 60 3 | 808 | 62 9 | 4,621 | 67 5 | 2,485 | 67 5 | 2,136 | 67 6 | 8 | 17 8 | Carriages, wagons, sleighs, and sleds | 1401 |
| 810 | 59 8 | 1,026 | 54 4 | 758 | 63 1 | 689 | 54 3 | 2,920 | 56 2 | 1,178 | 58 8 | 1,742 | 54 6 | 8 | 12 4 | Galvanizing and other coating | 1108 |
| 6,808 | 57 7 | 8,995 | 61 1 | 6,232 | 58 1 | 7,459 | 63 2 | 47,853 | 64 8 | 26,860 | 61 0 | 20,993 | 65 9 | 13 | 27 1 | Wrought pipe, welded and heavy riveted | 1128 |
| 3,716 | 53 3 | 5,066 | 52 8 | 3,616 | 56 2 | 4,094 | 54 2 | 8,236 | 38 6 | 2,204 | 33 9 | 6,032 | 40 7 | 11 | 6 6 | Furs, dressed and dyed | 1616 |
| 1,481 | 57 8 | 1,563 | 59 6 | 1,349 | 58 3 | 1,164 | 58 8 | 3,533 | 55 5 | 1,267 | 53 9 | 2,266 | 56 5 | 8 | 11 1 | Jewelry and instrument cases | 1622 |
| 1,847 | 55 2 | 3,153 | 51 5 | 1,380 | 58 2 | 1,896 | 58 6 | 21,034 | 60 9 | 12,356 | 66 5 | 8,678 | 54 4 | 49 | 25 7 | Ink, printing | 618 |
| 112 | 55 2 | 169 | 57 3 | 90 | 58 8 | 116 | 57 7 | 620 | 30 2 | 344 | 27 8 | 276 | 34 0 | 8 | 13 3 | Lapidary work | 1623 |
| 2,387 | 61 1 | 3,064 | 59 0 | 2,103 | 64 6 | 2,332 | 66 0 | 16,397 | 58 2 | 8,127 | 53 9 | 8,270 | 63 2 | 19 | 25 7 | Glue and gelatin | 616 |
| 11,209 | 60 8 | 15,644 | 60 8 | 10,094 | 60 5 | 12,973 | 60 1 | 162,543 | 68 1 | 124,548 | 69 0 | 37,995 | 65 3 | 34 | 38 6 | Coke-oven products | 701 |
| 3,591 | 50 2 | 2,983 | 44 3 | 3,386 | 57 6 | 2,613 | 57 7 | 55,945 | 56 4 | 29,243 | 51 6 | 26,702 | 62 9 | 13 | 5 0 | Liquors, rectified or blended | 136 |
| 1,325 | 50 8 | 1,330 | 49 9 | 1,038 | 51 2 | 678 | 51 7 | 23,278 | 52 8 | 17,719 | 51 8 | 5,559 | 56 2 | 21 | 30 9 | Rice cleaning and polishing | 127 |
| 2,237 | 62 2 | 2,834 | 61 5 | 2,045 | 65 0 | 2,375 | 66 6 | 12,967 | 71 1 | 8,537 | 77 3 | 4,430 | 61 6 | 8 | 16 4 | Springs, steel, except wire | 1118 |
| 1,880 | 55 8 | 1,414 | 55 7 | 1,806 | 56 9 | 1,134 | 56 7 | 3,626 | 58 9 | 1,311 | 58 9 | 2,315 | 58 8 | 15 | 20 8 | Boxes, cigar, wooden and part wooden | 303 |
| 1,810 | 51 4 | 2,418 | 57 2 | 1,424 | 49 7 | 1,695 | 56 3 | 4,945 | 54 6 | 1,312 | 48 1 | 3 633 | 57 4 | 8 | 8 6 | Musical instruments and parts and materials, n. e. c. | 1628 |
| 661 | 52 2 | 853 | 56 7 | 568 | 54 8 | 589 | 58 8 | 4,838 | 56 8 | 2,830 | 59 5 | 2,008 | 53 4 | 33 | 26 4 | Vinegar and cider | 132 |
| 1,461 | 55 0 | 1,583 | 51 8 | 1,246 | 57 2 | 1,029 | 52 3 | 6,947 | 55 5 | 2,607 | 53 2 | 4,280 | 57 0 | 8 | 9 8 | Beauty-shop equipment, except furniture | 1653 |
| 4,629 | 47 1 | 3,785 | 45 6 | 4,374 | 48 7 | 3,279 | 49 4 | 48,373 | 60 2 | 38,376 | 64 2 | 9,997 | 48 5 | 65 | 35 1 | Wood preserving | 319 |
| 315 | 59 7 | 569 | 61 9 | 258 | 61 5 | 309 | 69 3 | 4,466 | 68 5 | 2,390 | 69 1 | 2,076 | 67 5 | 11 | 23 9 | Foundry supplies | 1614 |
| 1,238 | 50 9 | 1,157 | 51 0 | 1,144 | 52 3 | 883 | 51 6 | 4,426 | 43 9 | 2,358 | 38 4 | 2,068 | 52 4 | 8 | 9 6 | Umbrellas, parasols, and canes | 1649 |
| 1,701 | 54 9 | 1,981 | 51 3 | 1,494 | 56 1 | 1,465 | 53 7 | 7,221 | 42 1 | 4,205 | 38 4 | 3,016 | 48 5 | 8 | 11 0 | Jewelers' findings and materials | 1224 |
| 11,380 | 50 2 | 14,515 | 48 8 | 9,611 | 50 4 | 10,835 | 51 0 | 31,597 | 45 9 | 10,330 | 44 7 | 21,267 | 46 5 | 14 | 4 0 | Textile machinery and parts | 1313 |
| 1,141 | 50 4 | 1,432 | 48 7 | 972 | 54 9 | 1,044 | 57 6 | 24,084 | 57 7 | 16,671 | 57 6 | 7,413 | 58 0 | 15 | 14 2 | Oils not elsewhere classified | 625 |
| 1,145 | 58 6 | 1,740 | 57 8 | 843 | 59 2 | 963 | 59 1 | 8,194 | 55 8 | 4,019 | 53 6 | 4,175 | 58 0 | 8 | 14 3 | Carbon paper and inked ribbons | 1607 |
| 11,914 | 49 2 | 15,527 | 50 5 | 10,985 | 51 0 | 13,201 | 54 0 | 68,849 | 54 0 | 37,178 | 54 3 | 31,671 | 53 8 | 20 | 22 7 | Wire drawn from purchased rods | 1126 |

TABLE I.—*Concentration in manufacturing industries,*

[Values in thou

| Industry number | Industry | Largest four producers | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Persons employed | | Wages and salaries | | Wage earners | | Wages | | Value of product | | Cost of materials, etc.[1] | | Value added by manufacturer[2] | | Number of establishments | |
| | | Number | Percent of industry | Amount | Percent of industry | Number | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Number | Percent of industry |
| | | 210 SMALL INDUSTRIES—Continued | | | | | | | | | | | | | | | |
| 1102 | Cast-iron pipe and fittings | 5,191 | 35 6 | 3,975 | 31 3 | 4,939 | 36 5 | 3,443 | 33 2 | 14,258 | 37 6 | 5,602 | 37 9 | 8,656 | 37 5 | 14 | 19 7 |
| 405 | Envelopes | 3,757 | 35 2 | 4,422 | 33 2 | 3,230 | 35 7 | 3,196 | 35 2 | 14,663 | 33 6 | 7,847 | 37 8 | 6,816 | 29 8 | 17 | 10 3 |
| 1642 | Sporting and athletic goods, not including firearms or ammunition. | 3,934 | 34 8 | 4,311 | 35 8 | 3,359 | 34 7 | 3,341 | 37 0 | 12,267 | 35 2 | 6,205 | 37 4 | 6,062 | 33 2 | 10 | 5 1 |
| 2172 | Handkerchiefs | 1,799 | 34 1 | 1,333 | 32 5 | 1,721 | 35 2 | 1,154 | 35 8 | 5,338 | 29 0 | 3,070 | 32 3 | 2,268 | 25 4 | 5 | 5 6 |
| 1324 | Cranes, and dredging, excavating, and road-building machinery | 4,868 | 34 0 | 6,800 | 35 0 | 3,784 | 35 0 | 4,629 | 36 9 | 17,882 | 28 5 | 7,532 | 26 2 | 10,350 | 30 4 | 8 | 6 3 |
| 126 | Poultry dressing and packing, wholesale | 3,213 | 33 9 | 2,157 | 30 2 | 2,765 | 34 2 | 1,543 | 30 5 | 27,366 | 29 4 | 23,066 | 30 1 | 4,300 | 26 4 | 166 | 29 5 |
| 1101 | Bolts, nuts, washers, and rivets | 4,889 | 33 6 | 6,189 | 34 1 | 4,302 | 34 4 | 4,860 | 36 3 | 16,754 | 29 2 | 8,488 | 29 3 | 8,266 | 29 2 | 13 | 9 5 |
| 622 | Oil, cake, and meal, cottonseed | 5,247 | 33 5 | 3,245 | 30 6 | 4,574 | 34 6 | 2,004 | 33 9 | 60,852 | 32 4 | 53,808 | 33 5 | 7,044 | 25 8 | 105 | 22 9 |
| 901 | Belting and packing, leather | 1,004 | 33 1 | 1,085 | 27 0 | 874 | 37 0 | 806 | 32 0 | 7,900 | 36 7 | 4,118 | 35 6 | 3,782 | 37 9 | 5 | 2 7 |
| 208 | Lace goods | 2,904 | 33 0 | 3,729 | 34 5 | 2,582 | 32 9 | 3,023 | 34 8 | 9,988 | 36 3 | 3,151 | 32 6 | 6,837 | 38 3 | 5 | 8 9 |
| 401 | Bags, paper, exclusive of those made in paper mills. | 3,274 | 32 6 | 2,982 | 28 4 | 3,090 | 33 9 | 2,556 | 31 8 | 21,806 | 33 3 | 13,692 | 32 9 | 8,114 | 34 1 | 14 | 13 1 |
| 1114 | Plumbers' supplies | 7,297 | 31 8 | 8,381 | 31 2 | 6,652 | 33 1 | 7,365 | 34 5 | 25,939 | 34 3 | 10,095 | 31 7 | 15,844 | 36 2 | 10 | 4 0 |
| 1302 | Cash registers, adding and calculating machines, business machines. | 7,361 | 31 6 | 9,947 | 29 5 | 5,666 | 30 7 | 7,079 | 29 9 | 18,598 | 19 6 | 5,086 | 36 9 | 13,512 | 16 7 | 7 | 7 5 |
| 614 | Fertilizers | 6,482 | 31 3 | 5,273 | 31 0 | 5,734 | 32 9 | 3,882 | 35 4 | 36,356 | 25 9 | 24,018 | 25 7 | 12,338 | 26 2 | 105 | 15 7 |
| 617 | Grease and tallow, not including lubricating greases. | 1,772 | 31 0 | 2,249 | 29 2 | 1,416 | 29 7 | 1,582 | 29 4 | 11,424 | 28 7 | 5,827 | 26 2 | 5,597 | 31 7 | 18 | 7 0 |
| 1104 | Doors, shutters, and window sash and frames, molding, etc. | 1,855 | 30 9 | 2,359 | 30 4 | 1,374 | 30 3 | 1,490 | 29 3 | 6,708 | 29 5 | 2,972 | 29 8 | 3,736 | 29 2 | 7 | 5 3 |
| 1002 | Cement | 7,161 | 30 7 | 7,361 | 26 8 | 6,508 | 31 5 | 5,868 | 28 1 | 35,179 | 29 2 | 12,107 | 28 2 | 23,072 | 29 8 | 37 | 24 2 |
| 632 | Tanning materials, natural dyestuffs, mordants, etc. | 1,091 | 30 6 | 1,309 | 23 2 | 883 | 33 3 | 786 | 29 8 | 10,482 | 31 2 | 6,355 | 32 2 | 4,127 | 29 6 | 21 | 13 7 |
| 1651 | Window shades (textile and paper) and fixtures. | 1,125 | 30 5 | 1,169 | 28 5 | 993 | 33 1 | 854 | 31 5 | 4,884 | 24 0 | 2,603 | 21 3 | 2,281 | 28 1 | 5 | 1 6 |
| 621 | Mucilage, paste, other adhesives, excluding glue and rubber cement. | 143 | 30 1 | 236 | 31 9 | 79 | 29 6 | 81 | 28 0 | 1,084 | 29 8 | 533 | 32 4 | 551 | 27 7 | 4 | 6 1 |
| 1325 | Printers' machinery and equipment | 3,878 | 30 0 | 6,018 | 29 4 | 3,013 | 30 5 | 4,347 | 32 0 | 15,362 | 29 8 | 2,807 | 21 5 | 12,555 | 32 6 | 5 | 2 1 |
| 202 | Cordage and twine; jute goods; linen goods | 5,989 | 29 3 | 4,539 | 24 8 | 5,452 | 29 3 | 3,556 | 25 5 | 20,727 | 30 1 | 10,388 | 30 1 | 10,339 | 30 1 | 16 | 10 8 |
| 318 | Window and door screens and weatherstrip | 675 | 29 0 | 703 | 26 3 | 608 | 32 4 | 467 | 26 8 | 1,960 | 22 6 | 889 | 21 7 | 1,071 | 23 5 | 5 | 3 5 |
| 1016 | Mirrors and other glass products | 3,550 | 29 0 | 4,468 | 32 0 | 3,332 | 31 2 | 4,005 | 36 8 | 37,745 | 54 9 | 14,953 | 51 3 | 22,792 | 57 6 | 5 | 0 9 |
| 604 | Blacking, stains, and dressings | 627 | 28 8 | 838 | 25 7 | 505 | 33 7 | 458 | 31 2 | 6,830 | 38 1 | 3,375 | 40 2 | 3,455 | 36 2 | 5 | 3 0 |
| 1620 | Instruments and apparatus, professional, scientific, commercial and industrial. | 5,739 | 28 7 | 7,838 | 28 1 | 4,465 | 29 4 | 5,175 | 29 5 | 18,783 | 27 5 | 5,410 | 26 3 | 13,373 | 28 0 | 10 | 3 6 |
| 206 | Hats, felt and straw, except millinery | 7,161 | 28 7 | 8,717 | 30 3 | 6,668 | 28 9 | 7,613 | 31 5 | 22,050 | 23 7 | 8,992 | 18 5 | 13,058 | 29 4 | 5 | 1 7 |
| 1501 | Railroad repair shops, electric | 5,931 | 28 2 | 9,946 | 33 0 | 5,418 | 27 7 | 8,771 | 32 5 | 15,636 | 32 3 | 5,546 | 31 9 | 10,090 | 32 6 | 16 | 6 2 |
| 128 | Sausage, meat puddings, headcheese, etc | 2,963 | 27 4 | 3,103 | 22 5 | 2,707 | 29 5 | 2,588 | 25 7 | 45,707 | 35 1 | 39,330 | 38 0 | 6,377 | 23 9 | 131 | 16 2 |
| 504 | Engraving, steel, copperplate and wood, and plate printing | 1,766 | 26 6 | 2,982 | 31 8 | 1,539 | 29 0 | 2,325 | 35 7 | 6,444 | 32 0 | 1,104 | 24 0 | 5,340 | 34 4 | 6 | 1 6 |
| 118 | Ice cream | 6,400 | 26 6 | 9,005 | 28 4 | 4,696 | 27 1 | 5,624 | 24 4 | 68,587 | 32 7 | 30,319 | 30 0 | 38,268 | 35 3 | 165 | 6 7 |
| 1613 | Feathers, plumes, and manufactures thereof | 179 | 26 5 | 148 | 24 2 | 105 | 28 8 | 119 | 28 1 | 304 | 18 5 | 108 | 17 7 | 196 | 18 9 | 4 | 5 5 |
| 219 | Fabricated textile products | 5,457 | 26 1 | 5,235 | 25 0 | 4,811 | 27 0 | 3,695 | 25 8 | 50,771 | 34 4 | 40,895 | 38 3 | 9,876 | 24 2 | 34 | 4 3 |
| 909 | Saddlery, harness, and whips | 980 | 26 0 | 971 | 25 0 | 903 | 27 9 | 795 | 27 2 | 3,376 | 25 3 | 2,077 | 26 9 | 1,299 | 23 1 | 4 | 2 5 |
| 130 | Sugar, cane, not including products of refineries | 959 | 25 8 | 554 | 24 5 | 729 | 24 8 | 430 | 28 1 | 8,229 | 31 3 | 5,559 | 39 4 | 2,670 | 33 4 | 11 | 14 9 |
| 1605 | Brushes other than rubber | 2,101 | 25 7 | 2,386 | 25 9 | 1,744 | 25 6 | 1,538 | 25 6 | 13,152 | 31 2 | 3,865 | 29 8 | 9,287 | 36 4 | 6 | 2 4 |
| 512 | Stereotyping and electrotyping, not done in printing establishments | 1,519 | 25 5 | 4,327 | 31 0 | 1,049 | 23 8 | 2,023 | 23 9 | 9,693 | 36 0 | 1,260 | 33 9 | 8,433 | 36 4 | 11 | 5 4 |
| 1601 | Artificial and preserved flowers and plants | 909 | 25 3 | 712 | 21 4 | 862 | 26 9 | 608 | 23 3 | 1,759 | 19 6 | 773 | 23 4 | 986 | 17 3 | 5 | 2 6 |
| 1624 | Mattresses and bedsprings, n. e. c | 4,464 | 24 9 | 5,145 | 26 0 | 3,925 | 25 4 | 4,044 | 27 5 | 21,879 | 25 8 | 12,327 | 25 2 | 9,552 | 23 6 | 13 | 1 5 |
| 902 | Boot and shoe cut stock and findings | 4,965 | 24 5 | 5,152 | 24 2 | 4,657 | 25 5 | 4,618 | 27 5 | 33,518 | 30 0 | 24,270 | 31 9 | 9,248 | 23 1 | 24 | 4 8 |
| 107 | Cheese | 1,212 | 24 0 | 1,251 | 25 6 | 900 | 22 8 | 913 | 23 2 | 17,931 | 18 1 | 14,313 | 17 0 | 3,618 | 24 4 | 149 | 5 8 |
| 1117 | Screw-machine products and wood screws | 4,138 | 23 9 | 4,803 | 21 8 | 3,644 | 24 3 | 3,850 | 22 9 | 13,467 | 21 4 | 6,710 | 25 2 | 6,757 | 18 5 | 8 | 2 7 |
| 315 | Synthetic-resin, cellulose plastic, etc., n. e. c | 3,371 | 23 5 | 3,730 | 24 2 | 3,035 | 23 8 | 3,115 | 25 8 | 13,865 | 27 6 | 6,370 | 30 0 | 7,495 | 25 8 | 14 | 9 2 |
| 704 | Lubricating greases, not made in petroleum refineries | 753 | 23 4 | 1,048 | 21 1 | 473 | 24 5 | 541 | 23 7 | 8,029 | 22 2 | 4,946 | 23 8 | 3,083 | 29 1 | 6 | 3 3 |
| 1646 | Theatrical scenery and stage equipment | 90 | 22 8 | 179 | 25 8 | 62 | 22 2 | 106 | 24 3 | 491 | 25 3 | 221 | 30 2 | 265 | 22 3 | 4 | 8 3 |
| 1125 | Tools, not including edge tools, machine tools, files, or saws | 3,427 | 22 8 | 3,817 | 20 8 | 2,925 | 23 1 | 2,912 | 21 9 | 12,571 | 23 9 | 4,637 | 25 0 | 7,934 | 23 4 | 13 | 3 8 |
| 320 | Wood turned and shaped and other wooden goods, n. e. c | 5,185 | 21 8 | 4,186 | 20 4 | 4,867 | 22 6 | 3,714 | 23 1 | 14,109 | 23 6 | 6,940 | 26 6 | 7,169 | 21 3 | 13 | 1 7 |
| 609 | Cleaning and polishing preparations | 965 | 21 7 | 1,431 | 21 0 | 696 | 24 6 | 879 | 29 0 | 10,376 | 24 5 | 4,258 | 24 6 | 6,118 | 24 3 | 4 | 1 0 |
| 1019 | Statuary and art goods (excluding concrete), factory product | 193 | 21 5 | 277 | 25 3 | 146 | 20 3 | 174 | 21 7 | 936 | 32 4 | 127 | 19 0 | 819 | 36 8 | 4 | 3 8 |
| 1309 | Pumps (hand and power) and pumping equipment | 4,227 | 21 2 | 6,536 | 24 2 | 3,144 | 21 0 | 4,361 | 25 2 | 17,722 | 20 4 | 6,194 | 17 6 | 11,528 | 22 3 | 4 | 1 2 |
| 135 | Liquors, vinous | 655 | 21 0 | 677 | 18 7 | 550 | 23 6 | 420 | 19 9 | 7,185 | 19 7 | 2,446 | 16 0 | 4,739 | 22 4 | 6 | 1 9 |
| 306 | Cooperage | 2,222 | 20 8 | 2,222 | 22 6 | 2,071 | 20 9 | 1,904 | 23 8 | 9,261 | 19 9 | 5,829 | 19 5 | 3,432 | 20 6 | 26 | 6 4 |
| 1103 | Cutlery (not including silver and plated cutlery) and edge tools | 3,095 | 20 0 | 3,617 | 20 3 | 2,759 | 20 1 | 2,665 | 19 7 | 17,927 | 35 0 | 3,676 | 23 2 | 14,251 | 36 9 | 5 | 1 9 |
| 1618 | Hand stamps and stencils and brands | 616 | 19 8 | 721 | 17 4 | 496 | 22 0 | 491 | 19 4 | 1,681 | 18 0 | 560 | 21 1 | 1,121 | 16 8 | 8 | 2 9 |
| 117 | Food preparations not elsewhere classified | 3,401 | 19 6 | 3,154 | 16 3 | 3,108 | 22 0 | 2,639 | 21 8 | 75,135 | 33 7 | 65,526 | 41 3 | 9,609 | 15 0 | 169 | 16 2 |
| 104 | Canned and cured fish, crabs, shrimps, oysters and clams. | 2,775 | 19 4 | 1,728 | 20 9 | 2,618 | 19 6 | 1,306 | 20 7 | 16,310 | 26 9 | 9,390 | 24 0 | 6,920 | 32 3 | 8 | 2 9 |
| 1321 | Boiler shops | 3,228 | 19 2 | 4,406 | 20 1 | 2,399 | 18 1 | 2,820 | 19 1 | 14,369 | 19 6 | 7,170 | 20 0 | 7,199 | 19 3 | 7 | 1 7 |
| 305 | Caskets, coffins, burial cases, and other morticians' goods. | 3,094 | 19 2 | 3,758 | 19 2 | 2,849 | 20 7 | 3,127 | 22 6 | 11,551 | 17 6 | 5,060 | 17 2 | 6,491 | 17 9 | 25 | 4 6 |
| 1015 | Minerals and earths, ground or otherwise treated. | 936 | 18 9 | 927 | 17 5 | 831 | 19 5 | 703 | 19 5 | 3,348 | 15 5 | 1,252 | 14 4 | 2,096 | 16 3 | 11 | 6 9 |
| 910 | Trunks, suitcases, and bags | 1,441 | 18 8 | 1,328 | 16 1 | 1,360 | 20 4 | 1,139 | 18 0 | 4,764 | 16 9 | 2,453 | 16 4 | 2,311 | 17 3 | 5 | 1 6 |
| 103 | Butter | 4,629 | 18 6 | 4,583 | 17 2 | 3,581 | 19 4 | 2,978 | 17 0 | 86,266 | 17 2 | 71,712 | 17 0 | 14,554 | 18 6 | 160 | 4 6 |
| 628 | Perfumes, cosmetics, and other toilet preparations. | 2,348 | 17 9 | 2,596 | 16 1 | 1,768 | 18 3 | 1,643 | 19 2 | 25,636 | 21 4 | 9,348 | 21 0 | 16,288 | 21 7 | 6 | 1 1 |

For footnotes, see end of table.

*1935, based on number of persons employed*—Continued

sands of dollars]

| Largest eight producers | | | | | | | | | | | | | | | | Industry | Industry number |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Persons employed | | Wages and salaries | | Ware earners | | Wages | | Value of product | | Cost of materials, etc.[1] | | Value added by manufacture[2] | | Number of establishments | | | |
| Number | Percent of industry | Amount | Percent of industry | Number | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Number | Percent of industry | | |
| 210 SMALL INDUSTRIES—Continued | | | | | | | | | | | | | | | | | |
| 7,904 | 54.8 | 7,041 | 55.5 | 7,120 | 54.8 | 5,738 | 55.3 | 23,859 | 63.0 | 9,291 | 62.8 | 14,598 | 63.1 | 21 | 29.6 | Cast-iron pipe and fittings | 1102 |
| 4,604 | 44.0 | 5,551 | 41.7 | 4,015 | 44.8 | 4,038 | 44.4 | 18,626 | 42.7 | 9,728 | 46.9 | 8,898 | 38.9 | 25 | 15.1 | Envelopes | 105 |
| 5,085 | 45.0 | 5,404 | 44.9 | 4,402 | 45.5 | 4,211 | 46.7 | 16,439 | 47.2 | 7,921 | 47.8 | 8,518 | 46.6 | 15 | 7.7 | Sporting and athletic goods, not including firearms or ammunition. | 1642 |
| 2,589 | 49.1 | 1,970 | 48.0 | 2,473 | 50.6 | 1,622 | 50.4 | 8,259 | 44.8 | 4,721 | 49.7 | 3,538 | 39.6 | 9 | 10.1 | Handkerchiefs | 2172 |
| 6,983 | 48.7 | 9,621 | 49.5 | 5,418 | 50.1 | 6,658 | 53.0 | 27,943 | 44.5 | 12,235 | 42.5 | 15,708 | 46.1 | 12 | 9.4 | Cranes, and dredging, excavating, and road-building machinery. | 1324 |
| 4,008 | 42.3 | 2,740 | 28.4 | 3,467 | 42.9 | 1,991 | 39.3 | 36,246 | 39.0 | 30,736 | 40.1 | 5,510 | 33.8 | 193 | 34.3 | Poultry dressing and packing, wholesale | 126 |
| 7,779 | 53.4 | 9,836 | 54.1 | 6,870 | 54.9 | 7,601 | 56.8 | 27,718 | 48.3 | 14,360 | 49.5 | 13,358 | 47.1 | 19 | 13.9 | Bolts, nuts, washers, and rivets | 1101 |
| 6,522 | 41.6 | 4,280 | 40.3 | 5,621 | 42.5 | 2,543 | 43.0 | 81,750 | 43.5 | 69,907 | 43.5 | 11,843 | 43.3 | 143 | 31.2 | Oil, cake, and meal, cottonseed | 622 |
| 1,390 | 45.8 | 1,534 | 38.2 | 1,216 | 51.5 | 1,176 | 46.7 | 11,483 | 53.1 | 6,135 | 53.1 | 5,348 | 53.6 | 10 | 5.1 | Belting and packing, leather | 901 |
| 4,952 | 56.2 | 6,109 | 56.5 | 4,350 | 55.1 | 4,912 | 56.6 | 16,368 | 50.5 | 5,232 | 54.1 | 11,136 | 62.4 | 9 | 16.1 | Lace goods | 208 |
| 4,402 | 43.8 | 4,161 | 39.7 | 4,129 | 45.3 | 3,516 | 43.7 | 31,944 | 48.7 | 20,386 | 48.9 | 11,558 | 48.5 | 21 | 22.1 | Bags, paper, exclusive of those made in paper mills | 401 |
| 9,871 | 43.0 | 11,217 | 41.8 | 8,804 | 44.2 | 9,680 | 45.0 | 34,144 | 45.1 | 13,362 | 42.0 | 20,782 | 47.5 | 16 | 6.3 | Plumbers' supplies | 1111 |
| 9,519 | 40.8 | 13,027 | 38.6 | 7,370 | 39.9 | 9,210 | 38.9 | 29,715 | 31.4 | 7,218 | 52.1 | 22,497 | 27.8 | 13 | 11.0 | Cash registers, adding and calculating machines, business machines. | 1302 |
| 9,326 | 45.1 | 7,293 | 42.8 | 8,292 | 47.5 | 5,363 | 48.9 | 58,356 | 41.6 | 39,760 | 42.6 | 18,596 | 39.5 | 168 | 25.1 | Fertilizers | 614 |
| 2,280 | 39.9 | 2,833 | 36.8 | 1,863 | 39.1 | 2,004 | 37.2 | 14,630 | 36.7 | 7,803 | 35.1 | 6,827 | 38.7 | 21 | 9.3 | Grease and tallow, not including lubricating greases. | 617 |
| 2,777 | 46.4 | 3,532 | 45.5 | 2,132 | 47.0 | 2,308 | 45.3 | 11,148 | 49.0 | 4,769 | 47.9 | 6,379 | 49.9 | 12 | 9.0 | Doors, shutters, and window sash and frames, molding, etc. | 1104 |
| 10,114 | 43.4 | 11,233 | 40.9 | 9,243 | 44.7 | 9,277 | 44.1 | 53,820 | 44.7 | 17,686 | 41.2 | 36,144 | 46.7 | 60 | 39.2 | Cement | 1002 |
| 1,705 | 47.9 | 2,265 | 40.1 | 1,387 | 52.3 | 1,311 | 49.7 | 14,919 | 44.4 | 9,009 | 45.7 | 5,910 | 42.1 | 28 | 18.2 | Tanning materials, natural dyestuffs, mordants, etc. | 632 |
| 1,618 | 43.8 | 1,806 | 44.0 | 1,407 | 46.9 | 1,217 | 46.0 | 9,403 | 46.3 | 5,632 | 48.6 | 3,471 | 42.8 | 25 | 7.8 | Window shades (textile and paper) and fixtures. | 1651 |
| 214 | 45.0 | 349 | 47.1 | 127 | 47.6 | 142 | 49.1 | 1,930 | 53.1 | 877 | 53.3 | 1,053 | 53.0 | 8 | 12.2 | Mucilage, paste, other adhesives, excluding glue and rubber cement. | 621 |
| 6,224 | 48.1 | 9,920 | 48.4 | 4,754 | 48.1 | 6,929 | 51.0 | 24,456 | 47.4 | 5,100 | 39.1 | 19,356 | 50.3 | 10 | 4.2 | Printers' machinery and equipment | 1325 |
| 8,530 | 44.8 | 7,236 | 39.6 | 7,726 | 41.5 | 5,551 | 39.8 | 30,684 | 44.6 | 14,950 | 43.3 | 15,734 | 45.8 | 21 | 14.2 | Cordage and twine; jute goods; linen goods | 202 |
| 918 | 39.4 | 904 | 37.2 | 789 | 42.1 | 634 | 36.4 | 3,556 | 41.0 | 1,653 | 10.3 | 1,903 | 41.7 | 10 | 7.0 | Window and door screens and weather strip | 318 |
| 4,202 | 34.3 | 5,213 | 37.3 | 3,909 | 36.6 | 4,574 | 42.0 | 41,095 | 59.8 | 16,683 | 57.2 | 24,412 | 61.7 | 11 | 2.6 | Mirrors and other glass products | 1016 |
| 889 | 40.8 | 1,153 | 35.4 | 718 | 47.9 | 646 | 44.0 | 8,948 | 49.9 | 4,228 | 50.1 | 4,720 | 49.5 | 9 | 5.4 | Blacking, stains, and dressings | 601 |
| 8,356 | 41.7 | 11,414 | 40.9 | 6,506 | 42.8 | 7,534 | 42.9 | 29,383 | 43.0 | 9,156 | 44.6 | 20,227 | 42.3 | 16 | 5.7 | Instruments and apparatus, professional, scientific, commercial, and industrial | 1620 |
| 9,315 | 37.3 | 11,493 | 40.0 | 8,647 | 37.5 | 10,007 | 41.4 | 31,462 | 33.8 | 13,912 | 28.6 | 17,550 | 39.5 | 11 | 3.7 | Hats, felt and straw, except millinery | 206 |
| 8,606 | 41.0 | 13,369 | 44.3 | 7,927 | 40.6 | 11,845 | 43.9 | 21,282 | 44.0 | 7,533 | 43.3 | 13,749 | 44.4 | 66 | 25.5 | Railroad repair shops, electric | 1501 |
| 3,360 | 31.1 | 3,703 | 26.8 | 3,046 | 33.2 | 2,957 | 29.3 | 50,221 | 38.6 | 42,776 | 41.1 | 7,445 | 27.9 | 135 | 16.7 | Sausage, meat puddings, headcheese, etc | 128 |
| 2,175 | 32.7 | 3,657 | 39.0 | 1,829 | 34.5 | 2,739 | 42.0 | 8,048 | 40.0 | 1,437 | 31.3 | 6,611 | 42.6 | 10 | 2.6 | Engraving, steel, copperplate, and wood, and plate printing. | 504 |
| 7,113 | 29.6 | 9,957 | 31.4 | 5,262 | 30.4 | 6,252 | 32.7 | 79,071 | 37.7 | 35,045 | 34.6 | 44,026 | 40.6 | 181 | 7.4 | Ice cream | 118 |
| 269 | 39.9 | 243 | 39.7 | 241 | 42.1 | 182 | 43.0 | 473 | 28.8 | 149 | 24.4 | 324 | 31.3 | 8 | 11.0 | Feathers, plumes, and manufactures thereof | 1613 |
| 6,698 | 32.0 | 6,398 | 30.5 | 5,971 | 33.5 | 4,614 | 32.2 | 70,354 | 47.7 | 56,886 | 53.3 | 13,468 | 33.0 | 41 | 5.2 | Fabricated textile products | 219 |
| 1,340 | 35.5 | 1,365 | 35.2 | 1,209 | 37.4 | 1,046 | 37.5 | 5,043 | 37.8 | 3,114 | 10.3 | 1,929 | 34.3 | 8 | 5.0 | Saddlery, harness, and whips | 909 |
| 1,100 | 37.7 | 946 | 41.9 | 1,094 | 37.2 | 685 | 44.8 | 12,385 | 47.1 | 8,537 | 46.7 | 3,848 | 18.2 | 16 | 21.6 | Sugar, cane, not including products of refineries. | 130 |
| 3,231 | 39.5 | 3,676 | 40.0 | 2,677 | 39.3 | 2,102 | 40.0 | 18,321 | 43.5 | 6,273 | 33.7 | 12,048 | 47.2 | 11 | 4.4 | Brushes, other than rubber | 1605 |
| 2,128 | 35.7 | 5,708 | 40.9 | 1,482 | 33.6 | 2,967 | 35.1 | 12,371 | 46.0 | 1,559 | 41.9 | 10,812 | 46.7 | 16 | 7.8 | Stereotyping and electrotyping, not done in printing establishments. | 512 |
| 1,198 | 33.3 | 1,156 | 34.8 | 1,120 | 34.9 | 995 | 38.1 | 2,818 | 31.7 | 1,071 | 32.4 | 1,777 | 31.2 | 9 | 4.7 | Artificial and preserved flowers and plants | 1601 |
| 5,295 | 29.6 | 6,128 | 31.0 | 4,659 | 30.2 | 1,789 | 32.6 | 26,458 | 31.2 | 15,275 | 31.2 | 11,183 | 31.2 | 30 | 3.6 | Mattresses and bedsprings, n. e. c | 1624 |
| 5,821 | 28.7 | 6,225 | 29.3 | 5,434 | 29.7 | 5,480 | 32.7 | 46,846 | 42.0 | 35,911 | 47.2 | 10,935 | 30.8 | 32 | 6.4 | Boot and shoe cut stock and findings | 902 |
| 1,426 | 28.2 | 1,500 | 30.7 | 1,177 | 27.1 | 1,123 | 28.5 | 22,245 | 22.5 | 17,829 | 21.2 | 4,416 | 29.8 | 189 | 7.3 | Cheese | 107 |
| 6,083 | 35.2 | 7,277 | 33.0 | 5,286 | 35.2 | 5,752 | 34.2 | 20,725 | 32.9 | 9,854 | 37.1 | 10,871 | 29.8 | 12 | 4.0 | Screw-machine products and wood screws | 1117 |
| 5,251 | 36.6 | 5,963 | 38.6 | 4,689 | 36.8 | 4,845 | 40.1 | 22,326 | 44.4 | 10,011 | 47.1 | 12,315 | 42.4 | 20 | 13.1 | Synthetic resin, cellulose plastic, etc., n. e. c | 315 |
| 1,072 | 33.3 | 1,469 | 29.6 | 725 | 37.5 | 831 | 36.5 | 14,472 | 40.1 | 9,166 | 44.1 | 5,306 | 34.6 | 13 | 7.2 | Lubricating greases, not made in petroleum refineries. | 704 |
| 151 | 38.3 | 335 | 48.3 | 109 | 39.1 | 212 | 48.6 | 832 | 43.0 | 335 | 41.8 | 497 | 41.8 | 8 | 16.6 | Theatrical scenery and stage equipment | 1646 |
| 5,131 | 34.1 | 5,827 | 31.7 | 4,128 | 35.0 | 4,483 | 33.7 | 18,981 | 36.1 | 6,878 | 36.8 | 12,103 | 35.8 | 17 | 5.0 | Tools, not including edge tools, machine tools, files, or saws. | 1125 |
| 6,489 | 27.2 | 5,318 | 25.9 | 6,041 | 28.1 | 4,594 | 28.6 | 17,076 | 28.6 | 8,259 | 31.7 | 8,817 | 26.2 | 27 | 3.6 | Wood turned and shaped and other wooden goods, n. e. c. | 320 |
| 1,442 | 32.5 | 2,112 | 31.5 | 1,020 | 36.1 | 1,226 | 40.4 | 14,502 | 31.2 | 5,603 | 32.4 | 8,899 | 35.4 | 8 | 2.0 | Cleaning and polishing preparations | 609 |
| 320 | 35.7 | 469 | 42.9 | 255 | 35.5 | 320 | 39.9 | 1,333 | 46.1 | 250 | 37.5 | 1,083 | 48.7 | 8 | 7.6 | Statuary and art goods (excluding concrete), factory products. | 1019 |
| 6,185 | 31.0 | 9,019 | 33.4 | 4,628 | 30.9 | 5,950 | 34.3 | 30,643 | 35.2 | 11,038 | 31.3 | 19,615 | 37.9 | 9 | 2.8 | Pumps (hand and power) and pumping equipment. | 1309 |
| 829 | 26.5 | 975 | 26.9 | 689 | 29.5 | 598 | 28.4 | 13,703 | 37.6 | 5,740 | 37.5 | 7,963 | 37.7 | 11 | 3.5 | Liquors, vinous | 135 |
| 3,641 | 34.1 | 3,610 | 36.7 | 3,451 | 34.9 | 3,140 | 39.3 | 18,845 | 40.5 | 12,668 | 42.3 | 6,177 | 37.2 | 88 | 21.6 | Cooperage | 306 |
| 4,475 | 28.9 | 5,103 | 28.6 | 4,022 | 29.3 | 3,802 | 28.1 | 23,121 | 45.2 | 4,394 | 34.9 | 18,727 | 48.5 | 10 | 3.8 | Cutlery (not including silver and plated cutlery) and edge tools. | 1103 |
| 929 | 29.8 | 1,132 | 27.3 | 747 | 33.1 | 783 | 30.9 | 2,696 | 28.9 | 882 | 33.2 | 1,814 | 27.2 | 15 | 5.4 | Hand stamps and stencils and brands | 1618 |
| 4,783 | 27.6 | 4,750 | 24.6 | 4,249 | 30.1 | 3,646 | 30.1 | 97,543 | 43.8 | 80,391 | 50.7 | 17,152 | 26.7 | 186 | 18.1 | Food preparations not elsewhere classified | 117 |
| 3,836 | 26.8 | 2,718 | 32.9 | 3,602 | 27.0 | 2,059 | 32.6 | 23,462 | 38.7 | 14,447 | 36.9 | 9,015 | 42.1 | 16 | 5.8 | Canned and cured fish, crabs, shrimps, oysters, and clams. | 104 |
| 4,638 | 27.6 | 6,351 | 29.0 | 3,575 | 26.9 | 1,228 | 28.6 | 23,911 | 32.7 | 11,816 | 32.9 | 12,098 | 32.5 | 14 | 3.4 | Boiler shops | 1321 |
| 3,970 | 24.6 | 4,872 | 24.9 | 3,625 | 26.3 | 3,983 | 29.8 | 15,457 | 23.5 | 6,825 | 23.2 | 8,632 | 23.8 | 30 | 5.5 | Caskets, coffins, burial cases, and other morticians' goods. | 305 |
| 1,579 | 31.9 | 1,664 | 31.4 | 1,396 | 32.8 | 1,222 | 33.8 | 5,882 | 27.3 | 2,134 | 24.6 | 3,748 | 29.1 | 18 | 11.2 | Minerals and earths, ground or otherwise treated. | 1015 |
| 2,066 | 27.0 | 2,109 | 25.5 | 1,907 | 28.6 | 1,692 | 26.7 | 7,451 | 26.4 | 3,824 | 25.6 | 3,627 | 27.2 | 10 | 3.2 | Trunks, suitcases, and bags | 910 |
| 6,833 | 27.4 | 7,039 | 26.1 | 5,154 | 27.9 | 4,477 | 25.6 | 128,750 | 25.7 | 107,407 | 25.4 | 21,343 | 27.3 | 244 | 7.9 | Butter | 103 |
| 3,341 | 25.5 | 3,756 | 23.3 | 2,640 | 27.3 | 2,460 | 28.7 | 48,655 | 40.7 | 15,499 | 34.8 | 33,156 | 44.2 | 10 | 1.8 | Perfumes, cosmetics, and other toilet preparations. | 628 |

TABLE I.—*Concentration in manufacturing industries,*

[Values in thou

| Industry number | Industry | Largest four producers | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Persons employed | | Wages and salaries | | Wage earners | | Wages | | Value of product | | Cost of materials, etc.[1] | | Value added by manufacture[2] | | Number of establishments | |
| | | Number | Percent of industry | Amount | Percent of industry | Number | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Number | Percent of industry |
| | | 210 SMALL INDUSTRIES—Continued | | | | | | | | | | | | | | | |
| 1604 | Brooms | 812 | 17 8 | 661 | 17. 6 | 769 | 18 5 | 537 | 17. 5 | 2, 329 | 16 2 | 1, 048 | 14 0 | 1, 281 | 18. 7 | 4 | 1. 1 |
| 1207 | Lighting equipment | 3, 560 | 17 7 | 4, 668 | 19 2 | 3, 278 | 19 7 | 4, 035 | 23 4 | 19, 434 | 22. 7 | 10, 478 | 26. 3 | 8, 956 | 19. 6 | 4 | . 8 |
| 1107 | Forgings, iron and steel | 2, 436 | 17. 6 | 10, 388 | 53. 8 | 2, 112 | 17. 2 | 9, 622 | 63 7 | 13, 657 | 20. 6 | 6, 979 | 20 1 | 6, 678 | 21. 1 | 13 | 7. 0 |
| 1013 | Lime | 1, 463 | 17. 6 | 1, 434 | 18. 9 | 1, 350 | 18. 0 | 1, 208 | 20. 0 | 5, 036 | 21. 6 | 1, 716 | 19. 2 | 3, 320 | 23. 1 | 18 | 9. 5 |
| 906 | Leather goods not elsewhere classified | 1, 224 | 17. 3 | 1, 284 | 17 2 | 1, 057 | 17. 6 | 1, 000 | 18 4 | 4, 855 | 18. 4 | 2, 149 | 16. 2 | 2, 706 | 20. 7 | 4 | 1. 0 |
| 1648 | Toys, games, and playground equipment | 2, 936 | 16 9 | 2, 845 | 17. 5 | 2, 718 | 17. 7 | 2, 311 | 19 1 | 8, 289 | 15. 9 | 3, 281 | 13. 9 | 5, 008 | 17. 6 | 7 | 1. 8 |
| 301 | Baskets and rattan and willowware, not including furniture. | 1, 627 | 16. 9 | 821 | 14. 4 | 1, 565 | 17. 4 | 713 | 15. 5 | 2, 138 | 14. 8 | 949 | 16. 6 | 1, 189 | 13. 6 | 8 | 3. 9 |
| 313 | Mirror and picture frames | 528 | 16. 5 | 553 | 15. 6 | 488 | 18. 2 | 429 | 16. 8 | 1, 541 | 15. 6 | 645 | 15. 5 | 896 | 15. 8 | 4 | 2. 4 |
| 1606 | Buttons | 1, 857 | 16. 3 | 1, 774 | 16. 9 | 1, 715 | 16 6 | 1, 446 | 17. 7 | 3, 904 | 13. 9 | 1, 638 | 14. 8 | 2, 266 | 13. 4 | 8 | 2. 7 |
| 905 | Gloves and mittens, leather | 1, 617 | 15. 3 | 1, 567 | 15. 7 | 1, 547 | 15. 8 | 1, 395 | 16 4 | 4, 036 | 14 3 | 1, 782 | 13. 3 | 2, 254 | 15. 3 | 4 | 1 8 |
| 506 | Lithographing | 3, 330 | 15 3 | 4, 966 | 14 1 | 2, 800 | 15. 8 | 3, 723 | 15. 4 | 13, 097 | 14 2 | 4, 593 | 15. 3 | 8, 504 | 13. 7 | 10 | 2. 6 |
| 114 | Feeds, prepared, for animals and fowls | 2, 355 | 15. 3 | 2, 780 | 15. 1 | 1, 779 | 15. 4 | 1, 837 | 16. 6 | 62, 533 | 21. 7 | 49, 172 | 21. 3 | 13, 361 | 23 0 | 45 | 4. 8 |
| 115 | Flavoring extracts, sirups, and related products. | 670 | 14 7 | 853 | 12 7 | 499 | 17 2 | 403 | 15. 2 | 32. 133 | 47. 4 | 10, 751 | 36 8 | 21, 382 | 55 3 | 11 | 2. 7 |
| 121 | Macaroni, spaghetti, vermicelli, and noodles | 970 | 13. 9 | 1, 108 | 15. 2 | 876 | 14. 6 | 858 | 16. 2 | 7, 325 | 15 4 | 4, 652 | 14 6 | 2, 673 | 16. 9 | 5 | 1. 5 |
| 627 | Insecticides and fungicides, etc., n. e. c. | 733 | 13. 4 | 941 | 11. 8 | 546 | 15. 7 | 593 | 17. 5 | 6, 776 | 12. 7 | 3, 897 | 16. 0 | 2, 879 | 9 9 | 6 | 1. 1 |
| 1210 | Jewelry | 2, 521 | 12. 2 | 2, 671 | 10 8 | 2, 331 | 13 6 | 2, 295 | 12 9 | 6, 730 | 9 5 | 2, 675 | 8 8 | 4, 055 | 10. 0 | 4 | . 4 |
| 211 | Waste and related products | 1, 284 | 12 1 | 1, 263 | 11 6 | 1, 144 | 12 4 | 866 | 11. 8 | 9, 378 | 14 2 | 5, 518 | 13. 1 | 3, 860 | 16 2 | 12 | 3. 8 |
| 501 | Bookbinding and blank-book making | 2, 838 | 11 7 | 3, 639 | 12. 0 | 2, 384 | 11. 7 | 2, 707 | 12. 4 | 9, 812 | 13. 4 | 3, 062 | 14 5 | 6, 750 | 12. 9 | 8 | . 8 |
| 1014 | Marble, granite, slate, and other stone, cut and shaped | 2, 028 | 11 0 | 1, 716 | 7 8 | 1, 784 | 11. 7 | 1, 319 | 8. 1 | 4, 020 | 7 1 | 1, 657 | 9. 1 | 2, 363 | 6. 2 | 16 | 1. 1 |
| 1204 | Sheet-metal work, not specifically classified | 2, 362 | 10 8 | 2, 960 | 10 4 | 1, 946 | 11. 2 | 2, 270 | 11. 6 | 19, 018 | 17 4 | 11, 568 | 20. 0 | 7, 450 | 14. 4 | 5 | . 4 |
| 1612 | Miscellaneous articles not elsewhere classified. | 1, 714 | 10 4 | 2, 049 | 12 6 | 1, 535 | 10. 8 | 1, 562 | 13. 2 | 5, 533 | 11 1 | 1, 950 | 9. 4 | 3, 583 | 12. 4 | 4 | . 6 |
| 507 | Photoengraving, not done in printing establishments. | 1, 316 | 10. 2 | 3, 257 | 10. 7 | 1, 076 | 11. 4 | 2, 586 | 12. 1 | 7, 017 | 13. 2 | 1, 657 | 21. 1 | 5, 360 | 11. 8 | 8 | 1. 2 |
| 214 | Furnishing goods, men's | 2, 506 | 10. 1 | 1, 480 | 6. 8 | 2, 377 | 10. 5 | 1, 274 | 7. 4 | 5, 440 | 6 1 | 3, 101 | 6 5 | 2, 339 | 5. 6 | 6 | . 7 |
| 1625 | Models and patterns, not including paper patterns. | 485 | 9. 8 | 966 | 11. 9 | 382 | 9. 3 | 619 | 10. 1 | 1, 797 | 11. 8 | 623 | 19 5 | 1, 174 | 9. 7 | 6 | 1. 0 |
| 1640 | Signs and advertising novelties | 1, 719 | 9. 7 | 2, 093 | 9 2 | 1, 475 | 10. 8 | 1, 567 | 10 5 | 5, 311 | 8 6 | 1, 794 | 8 5 | 3, 517 | 8 8 | 41 | 3. 8 |
| 908 | Pocketbooks, purses, and cardcases | 1, 196 | 9 5 | 1, 165 | 10. 0 | 1, 086 | 9. 5 | 834 | 9 0 | 3, 191 | 7 4 | 1, 345 | 6. 0 | 1, 846 | 8. 9 | 5 | 1. 6 |
| 1205 | Electroplating | 689 | 9 5 | 810 | 9. 0 | 612 | 9. 8 | 627 | 9 0 | 2, 268 | 12. 4 | 805 | 17. 5 | 1, 463 | 10. 7 | 7 | 1. 3 |
| 218 | Housefurnishings | 1, 356 | 8 1 | 1, 171 | 7 6 | 1, 237 | 8. 6 | 999 | 9. 2 | 6, 318 | 7. 3 | 3, 673 | 6. 6 | 2, 645 | 8. 4 | 6 | 7. 8 |
| 1005 | Concrete products | 799 | 7. 5 | 894 | 7. 4 | 674 | 8. 0 | 661 | 8 4 | 3, 656 | 8 1 | 1, 535 | 7. 6 | 2, 121 | 8. 5 | 29 | 2. 4 |
| 221 | Embroideries; trimmings; stamped art goods. | 721 | 5. 3 | 848 | 5. 8 | 642 | 5 4 | 511 | 4. 8 | 2, 657 | 5. 7 | 1, 497 | 7. 6 | 1, 160 | 4. 3 | 6 | . 5 |
| 101 | Beverages, nonalcoholic | 976 | 4. 4 | 1, 328 | 4. 5 | 818 | 4. 9 | 934 | 5 4 | 12, 942 | 8 1 | 3, 943 | 6 3 | 8, 999 | 9 3 | 68 | 2. 1 |
| 1615 | Fur goods | 341 | 2. 1 | 699 | 2. 4 | 294 | 2 4 | 548 | 2 6 | 3, 397 | 2 4 | 2, 257 | 2 5 | 1, 140 | 2 1 | 4 | . 2 |

* Large industries, those employing more than 100,000 persons; medum industries, those employing 25,000 to 100,000 persons; small industries, those employing less than 25,000 persons.

[1] Includes cost of materials, mill and shop supplies, containers, fuel, and purchased electric energy.

[2] Value of products less cost of materials, containers, fuel, and purchased electric energy.

TABLE II.—*Concentration in manufacturing*

[Value in thou

21 LARGE IN

| Industry No. | Industry | Largest four producers | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Persons employed | | Wages and salaries | | Wage earners | | Wages | | Value of product | | Cost of materials, etc.[1] | | Value added by manufacture[2] | | Number of establishments | |
| | | Number | Percent of industry | Amount | Percent of industry | Number | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Number | Percent of industry |
| 1408 | Motor vehicles, not including motorcycles | 118, 059 | 72. 1 | 185, 984 | 74. 6 | 108, 550 | 73. 9 | 167, 735 | 77. 3 | 2, 088, 047 | 87. 3 | 1, 600, 084 | 88. 2 | 487, 963 | 84. 6 | 40 | 33. 0 |
| 1407 | Motor-vehicle bodies and motor-vehicle parts. | 161, 924 | 62. 0 | 241, 401 | 64. 9 | 152, 881 | 63. 5 | 223, 579 | 68. 1 | 1, 076, 150 | 69. 4 | 733, 285 | 73. 1 | 342, 865 | 62. 6 | 42 | 5. 1 |
| 123 | Meat packing, wholesale | 53, 636 | 38 7 | 95, 639 | 53. 1 | 41, 301 | 35. 4 | 73, 259 | 53. 7 | 1, 313, 029 | 55. 6 | 1, 151, 767 | 56. 7 | 161, 262 | 48. 5 | 94 | 7. 7 |
| 1112 | Steel-works and rolling-mill products | 179, 282 | 46. 0 | 237, 606 | 46. 3 | 166, 280 | 46. 2 | 206, 616 | 47. 0 | 951, 819 | 49 3 | 578, 380 | 52. 1 | 373, 439 | 45. 5 | 76 | 19 2 |
| 1303 | Electrical machinery, apparatus, and supplies. | 88, 641 | 39 7 | 126, 599 | 43. 7 | 69, 721 | 38. 8 | 86, 073 | 43. 5 | 426, 276 | 44. 4 | 142, 079 | 38. 3 | 284, 197 | 48. 2 | 106 | 7. 6 |
| 1502 | Railroad repair shops, steam | 51, 400 | 35. 6 | 72, 043 | 36. 0 | 48, 147 | 35. 5 | 64, 230 | 35. 8 | 139, 183 | 37. 4 | 67, 124 | 39 5 | 72, 059 | 35. 7 | 114 | 27. 4 |
| 904 | Boots and shoes, other than rubber | 45, 401 | 21 0 | 42, 944 | 21. 5 | 43, 715 | 21. 6 | 40, 459 | 23. 6 | 167, 051 | 26. 0 | 92, 661 | 27. 8 | 74, 390 | 23. 9 | 68 | 6. 6 |
| 212 | Wool and hair manufactures | 36, 746 | 20. 9 | 35, 212 | 19. 9 | 34, 892 | 21. 0 | 31, 453 | 20. 6 | 171, 721 | 24. 2 | 114, 467 | 26. 5 | 57, 254 | 20. 5 | 47 | 6. 7 |

For footnotes, see end of table.

*1935, based on number of persons employed* — Continued

sands of dollars]

| Persons employed | | Wages and salaries | | Wage earners | | Wages | | Value of product | | Cost of materials, etc. | | Value added by manufacture | | Number of establishments | | Industry | Industry No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Number | Percent of industry | Amount | Percent of industry | Number | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Number | Percent of industry | | |
| | | | | | | | | | Largest establishments | | | | | | | | |
| | | | | | | | | | 210 SMALL INDUSTRIES—Continued | | | | | | | | |
| 1,108 | 24.3 | 933 | 24.9 | 1,046 | 25.2 | 773 | 25.2 | 3,297 | 28.0 | 1,486 | 19.9 | 1,811 | 26.4 | 8 | 2.3 | Brooms | 1604 |
| 5,280 | 26.3 | 7,025 | 28.9 | 4,672 | 27.9 | 5,550 | 32.3 | 26,831 | 34.8 | 13,750 | 41.5 | 16,081 | 37.1 | 8 | 1.6 | Lighting equipment | 1207 |
| 4,088 | 26.5 | 12,277 | 46.2 | 3,641 | 24.7 | 11,608 | 76.8 | 21,531 | 32.5 | 11,251 | 42.4 | 10,280 | 32.7 | 19 | 10.3 | Forgings, iron and steel | 1107 |
| 2,382 | 28.1 | 2,213 | 24.1 | 2,178 | 28.3 | 1,842 | 31.1 | 8,079 | 34.6 | 2,708 | 33.3 | 5,114 | 35.5 | 29 | 15.3 | Lime | 1013 |
| 1,566 | 22.1 | 1,607 | 22.7 | 1,341 | 22.3 | 1,260 | 23.2 | 6,997 | 26.5 | 3,238 | 23.1 | 3,759 | 28.7 | 8 | 2.0 | Leather goods not elsewhere classified | 906 |
| 4,432 | 25.5 | 4,444 | 25.8 | 4,026 | 26.1 | 3,715 | 29.0 | 13,366 | 25.6 | 5,854 | 24.8 | 7,512 | 26.1 | 11 | 2.9 | Toys, games, and playground equipment | 1648 |
| 2,339 | 24.3 | 1,458 | 25.6 | 2,219 | 24.6 | 1,176 | 25.5 | 3,710 | 25.6 | 1,461 | 25.7 | 2,249 | 25.7 | 14 | 6.9 | Baskets and rattan and willow ware, not including furniture | 301 |
| 857 | 27.4 | 1,021 | 28.8 | 776 | 28.2 | 776 | 29.6 | 3,076 | 31.2 | 1,452 | 31.8 | 1,624 | 28.6 | 8 | 4.8 | Mirror and picture frames | 813 |
| 2,942 | 25.9 | 2,872 | 27.1 | 2,700 | 27.2 | 2,302 | 28.2 | 7,579 | 27.0 | 2,937 | 29.7 | 4,642 | 27.4 | 15 | 7.1 | Buttons | 1646 |
| 2,763 | 21.2 | 2,500 | 25.0 | 2,428 | 24.8 | 2,215 | 29.0 | 6,727 | 23.2 | 3,089 | 22.4 | 3,638 | 23.9 | 8 | 3.6 | Gloves and mittens, leather | 905 |
| 5,228 | 21.0 | 7,936 | 32.5 | 4,266 | 24.1 | 3,720 | 28.7 | 20,615 | 32.4 | 7,042 | 28.5 | 13,573 | 34.9 | 14 | 3.6 | Lithographing | 706 |
| 3,371 | 21.8 | 4,194 | 22.8 | 2,962 | 22.1 | 2,089 | 24.3 | 99,078 | 34.3 | 79,453 | 34.4 | 19,625 | 33.8 | 62 | 6.6 | Feeds, prepared, for animals and fowls | 114 |
| 903 | 19.8 | 1,353 | 20.2 | 623 | 21.5 | 538 | 26.3 | 36,620 | 54.0 | 12,630 | 43.2 | 24,019 | 62.1 | 16 | 3.9 | Flavoring extracts, syrups, and related products | 116 |
| 1,672 | 24.0 | 1,834 | 25.2 | 1,522 | 25.3 | 1,439 | 27.1 | 12,574 | 26.4 | 8,093 | 25.1 | 4,481 | 28.4 | 9 | 2.7 | Macaroni, spaghetti, vermicelli, and noodles | 121 |
| 1,114 | 20.4 | 1,304 | 18.8 | 801 | 23.1 | 825 | 24.3 | 10,274 | 19.2 | 5,592 | 22.7 | 4,772 | 16.3 | 14 | 2.6 | Insecticides and fungicides, etc., n. e. c. | 627 |
| 3,294 | 15.9 | 3,710 | 15.0 | 2,952 | 17.4 | 3,016 | 16.9 | 10,945 | 15.1 | 4,110 | 14.6 | 6,537 | 16.1 | 8 | 8 | Jewelry | 1210 |
| 1,879 | 17.2 | 1,988 | 18.2 | 1,679 | 18.2 | 1,331 | 18.1 | 15,034 | 24.1 | 10,680 | 25.3 | 5,254 | 22.1 | 16 | 5.4 | Waste and related products | 214 |
| 4,124 | 17.0 | 5,112 | 17.9 | 3,408 | 17.7 | 3,382 | 17.7 | 15,111 | 20.6 | 4,874 | 23.1 | 10,237 | 19.6 | 14 | 4.4 | Bookbinding and blank-book making | 501 |
| 2,825 | 15.3 | 2,805 | 12.7 | 2,485 | 16.3 | 2,163 | 13.4 | 7,827 | 13.9 | 2,993 | 16.4 | 4,834 | 12.6 | 21 | 1.7 | Marble, granite, slate, and other stone, cut and shaped | 1013 |
| 3,184 | 14.6 | 4,148 | 14.4 | 2,711 | 14.5 | 2,810 | 14.4 | 28,965 | 26.4 | 28,108 | 31.9 | 10,197 | 20.4 | 39 | 2.8 | Sheet-metal work, not specifically classified | 1204 |
| 2,782 | 16.9 | 3,079 | 18.9 | 2,472 | 17.4 | 2,359 | 19.9 | 9,298 | 18.7 | 3,675 | 17.8 | 5,594 | 19.3 | 10 | 1.5 | Miscellaneous articles not elsewhere classified | 1042 |
| 1,969 | 17.4 | 1,959 | 16.3 | 1,653 | 17.4 | 3,927 | 18.4 | 10,758 | 20.2 | 2,802 | 35.7 | 7,956 | 17.5 | 13 | 2.0 | Photoengraving, not done in printing establishments | 50 |
| 3,908 | 15.8 | 2,441 | 11.3 | 3,728 | 16.5 | 2,151 | 12.5 | 9,414 | 10.5 | 5,532 | 11.5 | 3,882 | 9.3 | 10 | 1.2 | Furnishing goods, men's | 214 |
| 749 | 15.1 | 1,392 | 17.2 | 641 | 14.9 | 972 | 17.5 | 2,436 | 16.0 | 729 | 22.8 | 1,717 | 14.2 | 10 | 1.7 | Models and patterns, not including paper patterns | 1625 |
| 2,735 | 15.4 | 3,372 | 14.8 | 2,270 | 16.6 | 2,468 | 16.5 | 9,035 | 14.7 | 3,122 | 14.7 | 5,913 | 14.7 | 51 | 1.7 | Signs and advertising novelties | 1640 |
| 2,020 | 16.1 | 1,936 | 16.6 | 1,879 | 17.7 | 1,188 | 16.1 | 6,542 | 17.1 | 3,306 | 14.8 | 3,206 | 15.5 | 10 | 3.2 | Pocketbooks, purses, and small leather goods | 908 |
| 1,127 | 17.6 | 1,262 | 17.2 | 1,021 | 16.4 | 1,083 | 17.6 | 8,237 | 17.7 | 1,094 | 24.1 | 2,156 | 15.9 | 11 | 2.0 | Electroplating | 1206 |
| 2,218 | 13.3 | 1,902 | 12.6 | 1,997 | 13.9 | 1,531 | 14.1 | 11,056 | 12.7 | 7,101 | 12.8 | 3,962 | 12.5 | 20 | 25.9 | Housefurnishings | 218 |
| 1,228 | 11.6 | 1,307 | 12.4 | 1,054 | 12.3 | 1,041 | 13.3 | 5,102 | 11.1 | 1,996 | 9.9 | 3,106 | 12.5 | 47 | 3.8 | Concrete products | 1005 |
| 1,154 | 8.4 | 1,360 | 9.1 | 1,020 | 8.5 | 869 | 7.5 | 5,163 | 21.2 | 3,018 | 17.4 | 2,145 | 8.0 | 10 | .9 | Embroideries; trimmings; stamped art goods | 221 |
| 1,317 | 5.9 | 1,874 | 6.3 | 1,089 | 6.5 | 1,194 | 6.7 | 21,079 | 11.2 | 7,102 | 11.4 | 13,977 | 11.4 | 87 | 2.7 | Beverages, nonalcoholic | 101 |
| 495 | 3.0 | 1,012 | 5.5 | 432 | 4.4 | 836 | 4.9 | 6,414 | 4.5 | 4,765 | 5.1 | 1,870 | 3.4 | 8 | 4 | Fur goods | 1615 |

[1] The data for the largest 4 enterprises are combined with those for the largest 8 enterprises in order to avoid approximate disclosures of individual data.

[2] The data for the "remainder" of the industry are included in the data for the largest 8 enterprises in order to avoid approximate disclosures of individual data.

*and industries, 1935, based on value of products*

sands of dollars]

DUSTRIES[1]

| Persons employed | | Wages and salaries | | Wage earners | | Wages | | Value of product | | Cost of materials, etc. | | Value added by manufacture | | Number of establishments | | Industry | Industry |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Number | Percent of industry | Amount | Percent of industry | Number | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Number | Percent of industry | | |
| | | | | | | | | | Largest establishments | | | | | | | | |
| 112,527 | 87.1 | 220,960 | 88.6 | 130,365 | 88.7 | 197,109 | 90.8 | 2,252,630 | 94.2 | 1,719,112 | 94.8 | 533,728 | 92.5 | 47 | 58.8 | Motor vehicles, not including motorcycles | 1408 |
| 181,214 | 70.5 | 273,762 | 73.6 | 172,319 | 71.6 | 219,122 | 76.0 | 1,191,506 | 76.8 | 798,298 | 79.6 | 393,208 | 71.8 | 55 | 6.7 | Motor-vehicle bodies and motor-vehicle parts | 1407 |
| 65,616 | 47.3 | 109,808 | 61.0 | 71,430 | 44.1 | 84,083 | 61.6 | 1,500,135 | 63.5 | 1,312,604 | 64.7 | 187,531 | 56.4 | 113 | 9.2 | Meat packing, wholesale | 123 |
| 228,950 | 78.7 | 308,231 | 60.1 | 212,668 | 79.1 | 269,834 | 61.1 | 1,231,382 | 63.8 | 741,344 | 67.0 | 487,038 | 59.3 | 95 | 24.0 | Steel works and rolling-mill products | 1112 |
| 103,850 | 46.5 | 147,677 | 50.9 | 82,476 | 45.8 | 101,408 | 51.2 | 502,278 | 52.3 | 176,621 | 47.6 | 325,657 | 55.2 | 124 | 8.9 | Electrical machinery, apparatus, and supplies | 1303 |
| 76,791 | 53.2 | 106,855 | 53.4 | 72,101 | 53.1 | 95,436 | 53.2 | 199,765 | 53.7 | 92,882 | 54.6 | 106,883 | 53.0 | 181 | 13.5 | Railroad repair shops, steam | 1502 |
| 56,091 | 25.9 | 53,133 | 26.6 | 33,033 | 26.7 | 49,611 | 28.9 | 198,183 | 30.8 | 108,058 | 32.4 | 90,125 | 29.0 | 85 | 8.1 | Boots and shoes, other than rubber | 901 |
| 50,349 | 28.6 | 49,353 | 27.9 | 47,778 | 28.7 | 41,050 | 28.9 | 233,715 | 32.9 | 150,452 | 34.9 | 83,263 | 29.8 | 65 | 9.3 | Wool and hair manufactures | 212 |

TABLE II.—*Concentration in manufacturing indus*

[Values in thou

| Industry number | Industry | Largest four producers | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Persons employed | | Wages and salaries | | Wage earners | | Wages | | Value of product | | Cost of materials, etc [1] | | Value added by manufacturer [2] | | Number of establishments | |
| | | Number | Percent of industry | Amount | Percent of industry | Number | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Number | Percent of industry |
| | 21 LARGE INDUSTRIES—Continued | | | | | | | | | | | | | | | | |
| 105 | Canned and dried fruits and vegetables; preserves, jellies, fruit butters, pickles, and sauces. | 20,600 | 16.3 | 17,549 | 19.5 | 19,475 | 16.7 | 14,857 | 21.1 | 147,587 | 22.7 | 78,645 | 19.2 | 68,942 | 28.7 | 86 | 1.3 |
| 510 | Printing and publishing, newspaper and periodical. | 33,003 | 14.1 | 70,728 | 17.0 | 17,499 | 14.7 | 35,574 | 18.4 | 242,195 | 20.3 | 57,626 | 24.6 | 184,569 | 19.3 | 55 | .6 |
| 102 | Bread and other bakery products | 37,800 | 15.8 | 48,068 | 16.7 | 34,671 | 15.9 | 41,875 | 16.8 | 225,220 | 18.2 | 102,073 | 15.2 | 123,147 | 21.8 | 225 | 1.2 |
| 407 | Paper | 14,873 | 13.0 | 17,090 | 12.2 | 13,542 | 13.1 | 14,382 | 13.1 | 104,697 | 14.7 | 62,304 | 14.5 | 42,393 | 15.0 | 38 | 6.4 |
| 203 | Cotton manufactures | 32,875 | 8.3 | 23,567 | 8.5 | 32,032 | 8.4 | 21,941 | 8.9 | 86,477 | 8.4 | 54,542 | 8.7 | 31,935 | 7.9 | 25 | 2.0 |
| 213 | Men's cotton garments | 11,633 | 9.0 | 7,786 | 8.9 | 11,182 | 9.2 | 7,035 | 9.5 | 31,025 | 7.5 | 19,215 | 10.5 | 11,810 | 8.0 | 48 | 4.1 |
| 1305 | Machinery, n. e. c | 10,762 | 7.6 | 15,976 | 7.9 | 8,237 | 7.5 | 11,368 | 8.6 | 40,655 | 7.0 | 14,596 | 6.7 | 26,059 | 7.2 | 14 | .5 |
| 309 | Furniture, including store and office fixtures. | 7,553 | 5.1 | 7,165 | 4.9 | 6,999 | 5.4 | 6,200 | 5.5 | 24,225 | 5.6 | 11,741 | 5.6 | 12,484 | 5.5 | 16 | .5 |
| 234 | Knit goods | 11,979 | 5.1 | 13,089 | 6.1 | 11,233 | 5.1 | 11,801 | 6.4 | 32,174 | 5.3 | 12,550 | 4.3 | 19,624 | 6.3 | 13 | .7 |
| 215 | Men's, youths', and boys' clothing, n. e. c | 8,639 | 5.2 | 9,568 | 5.5 | 7,999 | 5.2 | 8,056 | 5.6 | 31,274 | 5.1 | 16,500 | 5.6 | 14,774 | 4.5 | 13 | .5 |
| 311 | Lumber and timber products, n. e. c | 10,158 | 3.8 | 11,716 | 5.6 | 9,734 | 3.8 | 10,838 | 5.9 | 25,927 | 4.7 | 6,588 | 3.2 | 19,339 | 5.6 | 14 | .2 |
| 508 | Printing and publishing, book, music, and job. | 7,940 | 4.8 | 11,986 | 4.7 | 6,632 | 5.2 | 8,795 | 5.2 | 30,876 | 4.4 | 7,745 | 4.0 | 23,131 | 4.6 | 10 | .1 |
| 216 | Women's, misses', and children's apparel, n. e. c. | 4,005 | 1.4 | 2,833 | .9 | 3,824 | 1.5 | 2,435 | 1.0 | 17,954 | 1.4 | 8,312 | 1.3 | 9,642 | 1.5 | 11 | .1 |
| | 44 MEDIUM INDUSTRIES * | | | | | | | | | | | | | | | | |
| 1052 | Cigarettes | 23,478 | 90.3 | 19,653 | 89.1 | 22,156 | 90.6 | 16,425 | 89.7 | 723,262 | 89.7 | 570,348 | 89.0 | 152,914 | 92.5 | 9 | 31.0 |
| 803 | Rubber tires and inner tubes | 52,172 | 79.4 | 80,787 | 83.2 | 45,644 | 79.9 | 66,080 | 84.4 | 361,202 | 80.9 | 213,723 | 80.5 | 147,479 | 81.7 | 12 | 28.6 |
| 1123 | Tin cans and other tinware, n. e. c | 21,739 | 68.6 | 25,610 | 69.1 | 18,597 | 67.6 | 19,295 | 69.3 | 236,371 | 80.8 | 169,333 | 82.2 | 67,038 | 77.6 | 76 | 37.3 |
| 629 | Rayon and allied products | 40,507 | 74.8 | 43,755 | 74.7 | 38,299 | 75.8 | 38,980 | 76.9 | 137,520 | 74.3 | 46,742 | 72.5 | 90,778 | 75.2 | 15 | 46.9 |
| 1301 | Agricultural implements | 42,765 | 70.0 | 57,892 | 73.6 | 37,155 | 70.3 | 48,306 | 75.1 | 210,972 | 72.4 | 102,000 | 73.2 | 108,972 | 71.8 | 22 | 9.1 |
| 201 | Carpets and rugs | 17,234 | 52.2 | 18,995 | 52.4 | 16,031 | 52.6 | 16,191 | 53.2 | 65,185 | 51.1 | 29,356 | 47.0 | 35,829 | 55.0 | 8 | 6.5 |
| 1310 | Refrigerators and refrigerating and ice-making apparatus. | 19,162 | 44.8 | 24,279 | 47.0 | 17,202 | 46.3 | 20,136 | 49.8 | 103,318 | 46.1 | 51,440 | 44.2 | 51,878 | 48.1 | 7 | 2.5 |
| 1008 | Glass | 27,236 | 37.1 | 34,540 | 40.2 | 24,731 | 36.8 | 29,344 | 41.1 | 127,435 | 44.9 | 45,574 | 41.4 | 81,861 | 47.1 | 38 | 17.8 |
| 1410 | Ship and boatbuilding, steel and wooden, including repair work. | 23,157 | 45.2 | 31,447 | 44.7 | 20,272 | 45.2 | 24,875 | 44.9 | 69,392 | 44.8 | 27,106 | 44.8 | 42,286 | 44.8 | 17 | 3.1 |
| 1119 | Steam and hot-water heating apparatus and steam fittings. | 13,195 | 41.1 | 15,724 | 40.7 | 11,579 | 42.7 | 12,729 | 44.2 | 43,206 | 38.7 | 13,802 | 36.9 | 29,404 | 39.6 | 15 | 5.5 |
| 1608 | Cigars | 17,342 | 29.6 | 11,703 | 30.1 | 16,591 | 29.6 | 10,202 | 30.5 | 58,225 | 38.5 | 30,481 | 39.2 | 27,744 | 37.8 | 25 | 3.6 |
| 705 | Petroleum refining | 35,246 | 38.3 | 56,061 | 39.1 | 30,007 | 38.8 | 43,620 | 39.8 | 701,298 | 38.2 | 573,791 | 38.8 | 127,507 | 35.4 | 64 | 16.2 |
| 1212 | Nonferrous-metal alloys, products, excluding aluminum, n. e. c. | 23,803 | 32.8 | 29,992 | 31.9 | 20,898 | 33.2 | 24,082 | 33.4 | 148,489 | 37.8 | 95,194 | 43.3 | 53,295 | 30.7 | 54 | 4.9 |
| 703 | Gas, manufactured, illuminating and heating. | 6,418 | 25.6 | 10,827 | 28.7 | 5,727 | 29.1 | 9,095 | 33.0 | 130,216 | 37.6 | 34,710 | 35.5 | 95,506 | 38.5 | 14 | 2.7 |
| 608 | Chemicals, n. e. c | 26,968 | 33.6 | 39,816 | 34.0 | 22,812 | 34.6 | 29,749 | 37.0 | 248,022 | 37.1 | 115,246 | 35.0 | 132,776 | 39.1 | 60 | 10.5 |
| 1109 | Hardware, n. e. c | 16,307 | 34.3 | 20,155 | 37.1 | 14,301 | 34.5 | 16,661 | 39.3 | 53,767 | 36.4 | 19,473 | 33.9 | 34,294 | 38.0 | 10 | 2.5 |
| 626 | Paints, pigments, and varnishes | 10,310 | 26.7 | 14,446 | 25.5 | 8,089 | 29.2 | 10,129 | 31.4 | 134,806 | 32.3 | 71,802 | 30.9 | 63,004 | 34.0 | 42 | 3.9 |
| 1304 | Engines, turbines, water wheels, and windmills. | 6,984 | 25.1 | 11,263 | 29.2 | 5,391 | 24.4 | 7,697 | 28.7 | 30,743 | 30.7 | 12,885 | 30.6 | 17,855 | 30.8 | 4 | 2.7 |
| 116 | Flour and other grain mill products | 6,406 | 18.9 | 8,597 | 20.5 | 5,386 | 20.3 | 6,660 | 24.6 | 250,460 | 29.4 | 210,194 | 29.4 | 40,266 | 29.4 | 41 | 1.9 |
| 1319 | Radio apparatus and phonographs | 17,695 | 33.9 | 21,126 | 36.6 | 14,414 | 32.2 | 14,390 | 33.5 | 57,430 | 28.6 | 27,117 | 26.2 | 30,333 | 31.1 | 6 | 3.0 |
| 1322 | Foundries | 19,877 | 20.4 | 28,112 | 24.3 | 19,513 | 21.8 | 27,179 | 27.6 | 63,139 | 25.2 | 23,803 | 26.5 | 39,336 | 24.5 | 29 | 2.3 |
| 1122 | Structural and ornamental metal work ** | 7,959 | 22.9 | 9,228 | 21.6 | 6,941 | 25.5 | 7,251 | 25.7 | 39,370 | 24.5 | 26,762 | 28.9 | 12,608 | 18.5 | 21 | 1.9 |
| 611 | Drugs and medicines | 5,510 | 17.5 | 7,742 | 17.5 | 4,630 | 20.9 | 5,298 | 24.1 | 68,151 | 23.4 | 15,753 | 18.9 | 52,398 | 25.1 | 15 | 1.5 |
| 1127 | Wirework, n. e. c | 6,662 | 23.1 | 8,193 | 24.2 | 5,925 | 23.5 | 6,669 | 26.2 | 27,124 | 23.1 | 11,862 | 21.3 | 15,262 | 24.6 | 19 | 3.5 |
| 410 | Pulp (wood and other fiber) | 6,216 | 24.2 | 6,775 | 24.0 | 5,794 | 24.5 | 5,877 | 25.1 | 37,875 | 22.7 | 21,893 | 22.8 | 15,982 | 22.5 | 31 | 16.5 |
| 907 | Leather: Tanned, curried, and finished | 10,166 | 18.5 | 13,110 | 19.7 | 9,381 | 18.4 | 11,404 | 20.4 | 69,405 | 22.5 | 44,144 | 22.3 | 25,261 | 22.9 | 29 | 7.6 |
| 1318 | Machine-tool accessories and machinists' precision tools. | 5,256 | 19.3 | 9,174 | 20.5 | 4,740 | 20.5 | 7,848 | 22.8 | 21,097 | 21.8 | 7,766 | 28.9 | 13,331 | 19.1 | 5 | .7 |
| 119 | Ice, manufactured | 3,450 | 13.0 | 4,559 | 13.0 | 2,891 | 15.2 | 3,465 | 16.8 | 26,531 | 20.7 | 4,824 | 17.2 | 21,707 | 21.6 | 409 | 10.6 |
| 1004 | Clay products (other than pottery) and nonclay refractories. | 7,103 | 14.4 | 5,531 | 12.6 | 6,835 | 15.3 | 4,975 | 14.4 | 21,419 | 19.3 | 8,629 | 22.7 | 12,790 | 17.5 | 46 | 4.3 |
| 802 | Rubber goods other than tires, inner tubes, and boots and shoes. | 8,561 | 18.4 | 10,553 | 20.1 | 7,296 | 18.1 | 8,139 | 20.7 | 34,336 | 19.2 | 17,041 | 20.7 | 17,325 | 18.0 | 10 | 2.4 |
| 1017 | Pottery, including porcelain ware | 5,465 | 17.5 | 6,014 | 17.8 | 5,167 | 17.9 | 5,326 | 19.0 | 12,674 | 19.0 | 3,337 | 18.6 | 9,337 | 19.1 | 7 | 2.7 |
| 209 | Rayon manufactures | 13,700 | 18.6 | 10,738 | 17.2 | 13,432 | 19.1 | 9,931 | 18.1 | 37,912 | 18.5 | 23,975 | 21.2 | 13,967 | 15.2 | 22 | 4.9 |
| 1121 | Stoves and ranges (other than electric) and warm-air furnaces. | 5,487 | 11.4 | 7,224 | 12.7 | 5,050 | 12.1 | 6,344 | 14.3 | 29,768 | 16.1 | 10,422 | 13.7 | 19,346 | 17.6 | 8 | 1.4 |
| 408 | Paper goods, n. e. c | 4,826 | 14.6 | 5,517 | 13.9 | 4,098 | 14.9 | 4,088 | 15.4 | 27,883 | 14.2 | 15,448 | 14.0 | 12,435 | 14.5 | 11 | 2.6 |
| 402 | Boxes, paper, n. e. c | 5,564 | 8.8 | 6,331 | 9.0 | 4,802 | 8.7 | 4,851 | 9.6 | 42,031 | 14.1 | 28,464 | 16.9 | 13,567 | 10.4 | 39 | 3.2 |
| 204 | Dyeing and finishing cotton, rayon, and silk | 11,819 | 14.9 | 10,511 | 12.3 | 10,973 | 15.4 | 8,761 | 13.2 | 30,972 | 13.9 | 17,274 | 16.9 | 13,698 | 11.3 | 8 | 1.5 |
| 304 | Boxes, wooden, except cigar boxes | 2,111 | 8.4 | 2,091 | 10.9 | 1,911 | 8.3 | 1,672 | 11.1 | 8,779 | 13.9 | 4,782 | 14.9 | 3,997 | 12.8 | 36 | 5.4 |
| 1307 | Machine tools | 4,625 | 13.0 | 7,449 | 14.2 | 3,236 | 11.5 | 4,977 | 13.4 | 16,785 | 13.8 | 4,284 | 11.8 | 12,501 | 14.6 | 4 | 1.6 |
| 112 | Confectionery | 5,484 | 9.4 | 5,156 | 10.0 | 5,059 | 9.7 | 4,116 | 10.5 | 32,594 | 12.5 | 18,334 | 11.9 | 14,260 | 13.4 | 4 | .3 |
| 1129 | Stamped and pressed metal products; enameling, japanning, and lacquering. | 5,266 | 9.3 | 6,527 | 9.7 | 4,622 | 9.3 | 5,027 | 9.8 | 25,060 | 12.0 | 13,104 | 13.0 | 11,956 | 11.1 | 8 | 1.1 |
| 134 | Liquors, malt | 4,227 | 8.8 | 8,117 | 9.8 | 3,567 | 9.1 | 6,224 | 10.2 | 49,293 | 11.8 | 14,811 | 10.6 | 34,482 | 12.3 | 6 | .9 |
| 210 | Silk manufactures | 4,520 | 7.8 | 4,265 | 9.1 | 4,149 | 7.4 | 3,537 | 8.7 | 17,196 | 11.5 | 11,196 | 16.1 | 6,000 | 7.5 | 6 | .9 |
| 1326 | Machine shops | 7,711 | 7.8 | 11,001 | 8.2 | 6,381 | 7.7 | 8,338 | 8.5 | 36,546 | 8.7 | 17,601 | 10.2 | 18,945 | 7.7 | 11 | .4 |
| 314 | Planing-mill products (including general millwork), made in planing mills not connected with sawmills. | 2,911 | 5.1 | 2,736 | 4.8 | 2,584 | 5.4 | 2,255 | 5.3 | 9,104 | 4.6 | 4,823 | 4.4 | 4,281 | 4.9 | 16 | .6 |
| | 210 SMALL INDUSTRIES * | | | | | | | | | | | | | | | | |
| 314 | Typewriters and parts | | | | | | | | | | | | | | | | |
| 624 | Oils, essential | | | | | | | | | | | | | | | | |
| 108 | Chewing gum | 1,802 | 69.7 | 2,323 | 74.5 | 1,683 | 72.7 | 1,960 | 81.1 | 43,958 | 92.0 | 13,117 | 87.5 | 30,841 | 94.1 | 5 | 19.2 |

For footnotes, see end of table.

*tries, 1935, based on value of products* Continued

sands of dollars]

| Persons employed | | Wages and salaries | | Wage earners | | Wages | | Value of product | | Cost of materials, etc | | Value added by manufacture | | Number of establishments | | Industry | Industry number |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Number | Percent of industry | Amount | Percent of industry | Number | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Number | Percent of industry | | |
| | | | | | | | | | | | | | | | | 21 LARGE INDUSTRIES—Continued | |
| 23,849 | 18.9 | 20,856 | 23.2 | 22,373 | 19.2 | 17,421 | 24.7 | 197,627 | 30.4 | 119,605 | 29.3 | 77,722 | 32.3 | 108 | 3.9 | Canned and dried fruits and vegetables, preserves, jellies, fruit butters, pickles and sauces | 305 |
| 40,021 | 17.1 | 84,084 | 20.2 | 22,354 | 18.8 | 43,225 | 22.4 | 303,971 | 25.5 | 73,072 | 31.2 | 230,899 | 24.1 | 59 | .7 | Printing and publishing, newspaper and periodical | 510 |
| 52,427 | 21.9 | 67,309 | 23.4 | 18,263 | 22.1 | 59,115 | 23.7 | 316,718 | 25.6 | 154,539 | 23.0 | 162,179 | 28.7 | 348 | 1.8 | Bread and other bakery products | 102 |
| 22,166 | 19.3 | 26,157 | 18.6 | 19,826 | 19.2 | 21,478 | 19.5 | 153,715 | 21.6 | 90,983 | 21.2 | 62,732 | 22.2 | 63 | 10.6 | Paper | 407 |
| 57,760 | 14.6 | 40,547 | 14.6 | 56,471 | 14.8 | 38,042 | 15.4 | 148,149 | 14.4 | 93,459 | 14.9 | 54,690 | 13.5 | 58 | 4.7 | Cotton manufactures | 203 |
| 21,861 | 17.0 | 14,514 | 16.7 | 20,959 | 17.2 | 13,040 | 17.6 | 55,974 | 16.9 | 34,426 | 18.8 | 21,548 | 14.5 | 72 | 6.4 | Men's cotton garments | 213 |
| 16,648 | 11.7 | 21,331 | 12.1 | 13,003 | 11.8 | 17,886 | 13.6 | 64,175 | 11.0 | 24,002 | 11.0 | 40,173 | 11.0 | 23 | .9 | Machinery n. e. c. | 1305 |
| 11,841 | 8.0 | 11,426 | 7.9 | 10,801 | 8.3 | 9,638 | 8.5 | 38,303 | 8.8 | 19,064 | 9.2 | 19,239 | 8.5 | 22 | .7 | Furniture, including store and office fixtures. | 309 |
| 20,216 | 8.7 | 20,210 | 9.1 | 19,184 | 8.7 | 18,387 | 10.0 | 51,687 | 8.5 | 21,369 | 7.2 | 30,318 | 9.7 | 26 | 1.1 | Knit goods | 231 |
| 12,510 | 7.5 | 14,806 | 8.6 | 11,408 | 7.4 | 12,408 | 8.6 | 54,052 | 8.8 | 27,179 | 9.3 | 26,873 | 8.3 | 20 | .7 | Men's, youths', and boys' clothing, n. e. c. | 215 |
| 17,191 | 6.4 | 18,487 | 8.8 | 16,418 | 6.4 | 16,704 | 9.1 | 42,012 | 7.6 | 12,997 | 6.2 | 29,015 | 8.4 | 26 | .4 | Lumber and timber products, n. e. c. | 311 |
| 10,863 | 6.5 | 16,077 | 6.5 | 8,857 | 6.6 | 11,088 | 6.9 | 45,175 | 6.5 | 11,163 | 5.7 | 34,012 | 6.7 | 53 | .5 | Printing and publishing, book, music, and job. | 508 |
| 8,664 | 3.0 | 6,114 | 2.0 | 8,262 | 3.2 | 5,242 | 2.2 | 30,371 | 2.4 | 15,233 | 2.4 | 15,138 | 2.3 | 19 | .2 | Women's, misses', and children's apparel, n. e. c. | 216 |
| | | | | | | | | | | | | | | | | 11 MEDIUM INDUSTRIES* | |
| 25,795 | 99.2 | 21,789 | 98.8 | 24,285 | 99.3 | 18,182 | 99.3 | 801,602 | 99.4 | 637,296 | 99.4 | 16,307 | 99.1 | 14 | 48.3 | Cigarettes | 1652 |
| 57,716 | 87.8 | 87,994 | 90.6 | 50,330 | 88.1 | 71,678 | 91.6 | 403,364 | 90.4 | 238,038 | 89.7 | 165,326 | 91.6 | 16 | 38.1 | Rubber tires and inner tubes | 803 |
| 23,532 | 74.3 | 27,549 | 74.3 | 20,214 | 73.5 | 20,788 | 74.7 | 250,288 | 85.6 | 180,567 | 87.6 | 69,720 | 80.7 | 87 | 42.7 | Tin cans and other tinware, n. e. c. | 1124 |
| 18,411 | 89.4 | 52,157 | 89.0 | 15,477 | 90.0 | 15,611 | 90.0 | 167,096 | 90.2 | 57,555 | 89.2 | 109,451 | 90.7 | 20 | 62.5 | Rayon and allied products | 629 |
| 51,915 | 85.0 | 68,780 | 87.5 | 45,125 | 85.4 | 57,258 | 89.0 | 255,564 | 87.7 | 123,357 | 88.5 | 132,207 | 87.1 | 33 | 13.7 | Agricultural implements | 1301 |
| 22,124 | 67.0 | 24,187 | 66.7 | 20,630 | 67.7 | 20,816 | 68.1 | 87,019 | 68.2 | 41,122 | 65.9 | 45,927 | 70.5 | 15 | 12.2 | Carpets and rugs | 201 |
| 24,951 | 58.4 | 29,881 | 57.9 | 22,256 | 59.9 | 24,446 | 60.1 | 130,087 | 58.0 | 67,124 | 57.7 | 62,963 | 58.1 | 11 | 4.0 | Refrigerators and refrigerating and ice-making apparatus. | 1310 |
| 35,875 | 48.9 | 45,304 | 52.8 | 32,570 | 48.5 | 38,089 | 53.3 | 173,266 | 61.0 | 70,572 | 64.2 | 102,694 | 59.0 | 19 | 23.0 | Glass | 1008 |
| 32,620 | 63.6 | 44,997 | 61.0 | 28,352 | 63.2 | 35,382 | 63.8 | 100,158 | 61.7 | 40,688 | 67.3 | 59,470 | 63.0 | 26 | 4.7 | Ship and boat building, steel and wooden, including repair work | 1410 |
| 16,197 | 51.1 | 19,488 | 50.4 | 14,117 | 53.2 | 15,617 | 54.2 | 54,991 | 49.2 | 17,751 | 47.4 | 37,240 | 50.1 | 26 | 9.5 | Steam and hot-water heating apparatus and steam fittings. | 1119 |
| 23,244 | 39.7 | 15,558 | 40.1 | 22,280 | 39.8 | 13,660 | 40.8 | 76,660 | 50.7 | 40,964 | 52.6 | 35,696 | 48.6 | 35 | 4.7 | Cigars | 1608 |
| 53,375 | 58.0 | 84,778 | 58.4 | 45,719 | 59.1 | 66,135 | 60.3 | 1,082,184 | 58.9 | 870,741 | 58.9 | 211,743 | 58.8 | 94 | 23.8 | Petroleum refining | 705 |
| 35,153 | 48.2 | 43,753 | 46.6 | 30,143 | 48.4 | 34,653 | 48.1 | 206,019 | 52.4 | 125,494 | 57.1 | 80,525 | 46.4 | 63 | 5.7 | Nonferrous-metal alloys, products, excluding aluminum, n. e. c. | 1212 |
| 11,621 | 46.3 | 18,507 | 49.0 | 9,967 | 50.6 | 14,897 | 53.9 | 193,962 | 56.1 | 51,847 | 53.0 | 142,115 | 57.3 | 109 | 21.0 | Gas, manufactured, illuminating and heating. | 703 |
| 38,171 | 47.5 | 55,991 | 47.8 | 31,663 | 48.1 | 40,105 | 49.8 | 321,614 | 48.5 | 118,160 | 45.1 | 176,154 | 51.9 | 90 | 17.8 | Chemicals, n. e. c. | 608 |
| 30,775 | 43.7 | 25,082 | 46.2 | 18,267 | 44.1 | 20,627 | 48.8 | 67,230 | 45.5 | 25,031 | 43.6 | 42,189 | 46.7 | 15 | 3.7 | Hardware, n. e. c. | 1109 |
| 13,557 | 35.1 | 18,318 | 32.3 | 10,697 | 38.6 | 12,856 | 39.9 | 174,108 | 41.8 | 93,994 | 40.5 | 80,174 | 43.3 | 70 | 6.5 | Paints, pigments, and varnishes | 626 |
| 11,378 | 40.9 | 17,208 | 41.7 | 8,928 | 40.5 | 12,106 | 45.1 | 47,233 | 47.2 | 20,683 | 49.2 | 26,550 | 45.8 | 9 | 6.0 | Engines, turbines, water wheels, and windmills. | 1304 |
| 8,738 | 25.8 | 11,745 | 38.1 | 7,189 | 27.1 | 8,642 | 31.9 | 315,798 | 37.0 | 265,403 | 37.1 | 50,395 | 36.8 | 93 | 1.2 | Flour and other grain mill products | 116 |
| 23,605 | 45.2 | 26,451 | 45.8 | 19,735 | 44.1 | 18,679 | 43.5 | 77,569 | 38.6 | 37,511 | 36.2 | 40,058 | 41.1 | 13 | 6.6 | Radio apparatus and phonographs | 1319 |
| 26,117 | 26.8 | 35,239 | 30.5 | 25,130 | 28.0 | 33,122 | 33.6 | 82,311 | 32.9 | 30,284 | 33.7 | 52,027 | 32.4 | 18 | 3.8 | Foundries | 1322 |
| 10,483 | 30.1 | 12,203 | 28.6 | 8,913 | 32.7 | 9,106 | 32.3 | 50,622 | 31.5 | 32,551 | 35.2 | 18,071 | 23.5 | 28 | 2.5 | Structural and ornamental metal work ** | 1122 |
| 7,581 | 24.1 | 10,645 | 24.0 | 6,063 | 27.4 | 6,551 | 29.8 | 97,109 | 33.3 | 21,866 | 26.2 | 75,243 | 30.1 | 27 | 2.6 | Drugs and medicines | 611 |
| 10,418 | 36.2 | 12,359 | 36.6 | 9,395 | 37.3 | 10,052 | 39.5 | 11,481 | 35.4 | 19,251 | 34.6 | 22,230 | 35.9 | 25 | 1.7 | Wirework, n. e. c. | 1127 |
| 7,968 | 31.0 | 9,004 | 31.9 | 7,357 | 31.1 | 7,646 | 32.7 | 57,669 | 31.5 | 34,575 | 35.9 | 23,094 | 32.5 | 30 | 29.7 | Pulp (wood and other fiber) | 410 |
| 16,239 | 29.6 | 20,448 | 30.7 | 15,180 | 29.7 | 17,679 | 31.7 | 105,753 | 34.3 | 66,697 | 33.7 | 39,056 | 35.4 | 51 | 13.3 | Leather Tanned, curried, and finished | 907 |
| 7,657 | 28.1 | 12,724 | 28.5 | 6,817 | 29.5 | 10,606 | 30.8 | 29,771 | 30.7 | 10,334 | 38.4 | 19,437 | 27.8 | 12 | 1.6 | Machine-tool accessories and machinists' precision tools. | 1318 |
| 4,755 | 17.9 | 6,113 | 17.5 | 3,760 | 19.8 | 4,510 | 21.9 | 35,893 | 28.0 | 6,949 | 24.8 | 28,944 | 28.8 | 563 | 14.6 | Ice, manufactured | 119 |
| 9,696 | 19.7 | 8,363 | 19.0 | 9,152 | 20.5 | 7,097 | 20.5 | 29,598 | 26.6 | 11,578 | 30.5 | 18,020 | 24.6 | 63 | 5.9 | Clay products (other than pottery) and nonclay refractories. | 1004 |
| 12,230 | 26.3 | 15,117 | 28.8 | 10,539 | 26.1 | 11,972 | 30.4 | 50,943 | 28.5 | 25,107 | 30.5 | 25,845 | 26.9 | 15 | 3.6 | Rubber goods other than tires, inner tubes, and boots and shoes. | 802 |
| 8,589 | 27.5 | 9,549 | 28.3 | 8,103 | 28.1 | 8,329 | 29.7 | 19,424 | 29.1 | 5,214 | 29.0 | 14,210 | 29.1 | 12 | 1.7 | Pottery, including porcelain ware | 1017 |
| 18,789 | 25.5 | 15,538 | 24.9 | 18,267 | 26.0 | 14,182 | 25.8 | 55,422 | 27.1 | 35,013 | 31.0 | 20,409 | 22.3 | 27 | 6.0 | Rayon manufactures | 209 |
| 9,202 | 19.1 | 12,086 | 21.3 | 8,321 | 19.9 | 10,414 | 23.5 | 42,645 | 23.0 | 14,889 | 19.6 | 27,746 | 25.3 | 15 | 2.7 | Stoves and ranges (other than electric) and warm-air furnaces | 1121 |
| 7,034 | 21.3 | 8,313 | 21.0 | 5,957 | 21.7 | 6,088 | 23.0 | 46,184 | 23.7 | 25,655 | 23.6 | 20,529 | 23.9 | 22 | 4.0 | Paper goods, n. e. c. | 408 |
| 8,398 | 13.3 | 9,651 | 13.8 | 7,390 | 13.1 | 7,582 | 15.0 | 61,914 | 24.7 | 41,455 | 24.6 | 20,458 | 15.7 | 52 | 4.3 | Boxes, paper, n. e. c. | 402 |
| 17,630 | 22.2 | 17,974 | 21.1 | 15,032 | 22.3 | 13,813 | 20.9 | 49,879 | 22.3 | 26,037 | 25.5 | 23,842 | 23.7 | 17 | 3.3 | Dyeing and finishing cotton, rayon, and silk | 204 |
| 4,179 | 16.7 | 3,580 | 18.7 | 3,374 | 16.8 | 2,939 | 19.6 | 13,760 | 21.8 | 7,324 | 22.8 | 6,475 | 20.8 | 51 | 7.7 | Boxes, wooden, except cigar boxes | 304 |
| 7,851 | 22.1 | 12,056 | 23.0 | 6,009 | 21.3 | 8,594 | 23.1 | 28,599 | 23.5 | 8,394 | 23.1 | 20,205 | 23.6 | 9 | 3.5 | Machine tools | 1307 |
| 9,172 | 15.8 | 8,948 | 17.3 | 8,208 | 15.9 | 6,845 | 17.1 | 51,827 | 19.9 | 29,435 | 19.2 | 22,392 | 21.1 | 16 | 1.2 | Confectionery | 112 |
| 8,370 | 14.8 | 10,392 | 15.4 | 7,390 | 14.8 | 8,038 | 15.7 | 38,802 | 18.6 | 20,320 | 20.1 | 18,482 | 17.2 | 12 | 1.7 | Stamped and pressed metal products; enameling, japanning and lacquering. | 1129 |
| 6,037 | 12.6 | 11,776 | 14.2 | 5,187 | 13.2 | 9,057 | 14.9 | 74,187 | 17.7 | 22,703 | 16.2 | 51,484 | 18.4 | 11 | 1.7 | Liquors, malt | 131 |
| 6,128 | 10.5 | 5,788 | 12.3 | 5,623 | 10.1 | 4,735 | 11.7 | 27,637 | 18.5 | 16,622 | 23.9 | 11,015 | 13.8 | 11 | 1.7 | Silk manufactures | 210 |
| 13,008 | 13.1 | 17,664 | 13.1 | 11,141 | 13.5 | 13,873 | 14.2 | 61,157 | 14.6 | 28,649 | 16.6 | 32,508 | 13.2 | 20 | .7 | Machine shops | 1326 |
| 4,225 | 7.4 | 4,195 | 7.3 | 3,703 | 7.7 | 3,416 | 8.1 | 15,952 | 8.1 | 9,503 | 8.7 | 6,449 | 7.4 | 29 | 1.1 | Planing-mill products (including general millwork), made in planing mills not connected with sawmills | 314 |
| | | | | | | | | | | | | | | | | 210 SMALL INDUSTRIES* | |
| 16,834 | 99.5 | 18,686 | 99.4 | 15,333 | 99.6 | 16,579 | 99.7 | 33,609 | 99.3 | 8,563 | 99.2 | 25,046 | 99.3 | 14 | 70.0 | Typewriters and parts | 1311 |
| 214 | 91.5 | 430 | 95.3 | 154 | 92.8 | 210 | 95.9 | 3,481 | 98.3 | 2,577 | 99.0 | 904 | 96.2 | 8 | 66.7 | Oils, essential | 1624 |
| 2,184 | 84.4 | 2,750 | 88.2 | 2,001 | 86.4 | 2,222 | 91.9 | 16,409 | 97.3 | 14,364 | 95.9 | 32,135 | 98.0 | 9 | 34.6 | Chewing gum | 108 |

TABLE II.—*Concentration in manufacturing indus*

[Values in thou

| Industry number | Industry | Largest four producers | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Persons employed | | Wages and salaries | | Wage earners | | Wages | | Value of product | | Cost of materials, etc.[1] | | Value added by manufacturer[2] | | Number of establishments | |
| | | Number | Percent of industry | Amount | Percent of industry | Number | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Number | Percent of industry |
| | | 210 SMALL INDUSTRIES—Continued | | | | | | | | | | | | | |
| 602 | Ammunition and related products | 5,801 | 91 8 | 5,988 | 84 7 | 5,207 | 93 0 | 4,791 | 93 6 | 24,136 | 91 7 | 9,580 | 93 9 | 14,556 | 90 4 | 7 | 53 8 |
| [3]1003 | China firing and decorating, not done in potteries | | | | | | | | | | | | | | | | |
| 1609 | Combs and hairpins, other than metal and rubber | 242 | 87 7 | 246 | 89 5 | 215 | 90 3 | 177 | 91 7 | 622 | 88 1 | 281 | 89 2 | 341 | 87 2 | 4 | 36 4 |
| 623 | Oil, cake, and meal, linseed | 2,273 | 87 6 | 2,760 | 87 3 | 2,092 | 89 0 | 2,373 | 89 5 | 52,978 | 87 9 | 42,938 | 88 0 | 10,040 | 87 6 | 17 | 68 0 |
| 612 | Drug grinding | 582 | 82 2 | 832 | 83 4 | 491 | 83 2 | 479 | 79 7 | 5,195 | 87 8 | 2,983 | 88 3 | 2,212 | 87 2 | 7 | 33 3 |
| 1010 | Graphite, ground and refined | 303 | 93 5 | 390 | 92 9 | 247 | 96 5 | 250 | 95 8 | 1,834 | 86 4 | 773 | 82 1 | 1,061 | 89 9 | 4 | 44 4 |
| 1105 | Files | 2,671 | 83 0 | 3,159 | 82 9 | 2,456 | 84 3 | 2,604 | 85 1 | 7,879 | 85 8 | 1,917 | 85 8 | 5,962 | 85 8 | 6 | 27 3 |
| 605 | Bluing | 58 | 59 2 | 125 | 78 1 | 34 | 58 6 | 41 | 74 5 | 776 | 85 1 | 221 | 78 3 | 552 | 88 2 | 6 | 40 0 |
| 1115 | Safes and vaults | 895 | 84 4 | 1,087 | 84 9 | 685 | 84 7 | 682 | 85 3 | 2,808 | 84 8 | 992 | 82 4 | 1,816 | 86 1 | 4 | 28 6 |
| 619 | Ink, writing | 433 | 83 5 | 589 | 83 0 | 322 | 85 4 | 320 | 84 2 | 2,808 | 83 0 | 1,135 | 80 2 | 1,673 | 85 1 | 4 | 18 2 |
| 613 | Explosives | 4,256 | 80 6 | 6,024 | 80 7 | 3,753 | 82 1 | 4,776 | 84 6 | 33,351 | 82 0 | 13,892 | 81 7 | 19,459 | 82 2 | 37 | 50 0 |
| 1106 | Firearms | 4,296 | 78 6 | 5,254 | 79 9 | 3,808 | 78 1 | 4,482 | 81 5 | 10,670 | 81 9 | 2,680 | 79 1 | 7,990 | 82 9 | 6 | 27 3 |
| 801 | Boots and shoes, rubber | 14,803 | 76 7 | 15,094 | 79 1 | 13,162 | 76 3 | 12,703 | 78 8 | 43,498 | 81 8 | 16,912 | 81 6 | 26,586 | 82 0 | 6 | 50 0 |
| 222 | Asphalted-felt-base floor covering; linoleum | 5,854 | 84 9 | 7,791 | 83 3 | 5,479 | 85 5 | 6,931 | 85 5 | 42,752 | 81 6 | 18,941 | 79 1 | 23,811 | 83 7 | 9 | 56 3 |
| 606 | Bone black, carbon black, and lampblack | 1,569 | 76 9 | 1,905 | 78 5 | 1,413 | 77 3 | 1,544 | 79 7 | 12,000 | 81 0 | 4,088 | 76 7 | 7,912 | 83 5 | 41 | 74 5 |
| 113 | Corn sirup, corn sugar, corn oil, and starch | 6,168 | 71 6 | 8,813 | 74 2 | 5,156 | 70 3 | 6,143 | 72 8 | 82,079 | 79 2 | 54,780 | 78 0 | 27,299 | 81 8 | 16 | 44 4 |
| 610 | Compressed and liquefied gases | 4,870 | 76 4 | 5,880 | 72 1 | 2,948 | 77 8 | 3,343 | 75 8 | 33,279 | 79 2 | 8,878 | 79 0 | 24,401 | 79 3 | 243 | 73 6 |
| 124 | Oleomargarine, not made in meat-packing establishments | 1,211 | 82 1 | 1,614 | 81 0 | 975 | 82 9 | 1,105 | 84 8 | 25,615 | 79 1 | 18,127 | 77 8 | 7,488 | 82 2 | 6 | 42 8 |
| 1312 | Sewing machines and attachments | 7,135 | 82 0 | 9,334 | 80 6 | 6,288 | 84 7 | 7,596 | 83 9 | 17,857 | 78 9 | 4,800 | 79 6 | 12,057 | 72 5 | 5 | 12 8 |
| 1636 | Photographic apparatus and materials and projection apparatus | 11,885 | 76 9 | 18,003 | 77 7 | 9,472 | 78 8 | 12,089 | 80 4 | 57,628 | 77 9 | 13,665 | 52 3 | 43,963 | 91 9 | 7 | 5 9 |
| 1206 | Fire extinguishers, chemical | 856 | 77 4 | 1,166 | 79 5 | 642 | 79 7 | 800 | 82 9 | 4,121 | 77 1 | 1,883 | 76 2 | 2,238 | 78 0 | 4 | 16 0 |
| 307 | Cork products | 2,553 | 75 8 | 2,650 | 74 9 | 2,367 | 77 1 | 2,162 | 77 9 | 10,755 | 76 9 | 5,438 | 77 5 | 5,317 | 76 3 | 7 | 20 6 |
| 1022 | Gypsum products | 2,642 | 67 8 | 3,001 | 66 5 | 2,340 | 69 2 | 2,421 | 70 3 | 20,004 | 76 1 | 6,386 | 71 6 | 13,618 | 78 4 | 34 | 47 2 |
| 1201 | Aluminum products | 16,911 | 76 6 | 19,418 | 75 7 | 14,819 | 76 9 | 15,732 | 77 4 | 79,036 | 76 0 | 44,946 | 76 9 | 34,090 | 74 7 | 16 | 9 4 |
| 1208 | Gold leaf and foil | 150 | 73 1 | 400 | 73 5 | 406 | 72 9 | 295 | 73 2 | 1,347 | 75 5 | 713 | 74 3 | 634 | 77 0 | 5 | 18 5 |
| 1641 | Soda fountains and accessories | 1,021 | 69 1 | 1,032 | 70 1 | 774 | 70 6 | 1,050 | 73 1 | 6,074 | 74 0 | 3,100 | 75 2 | 2,974 | 72 8 | 8 | 16 7 |
| 631 | Soap | 10,795 | 65 3 | 13,800 | 62 6 | 9,042 | 65 0 | 10,468 | 68 2 | 175,870 | 73 5 | 102,529 | 73 5 | 73,341 | 73 5 | 18 | 7 6 |
| 1405 | Cars, electric and steam railroad | 15,770 | 64 2 | 20,019 | 63 1 | 13,748 | 64 0 | 16,219 | 63 0 | 72,090 | 71 7 | 45,031 | 73 9 | 26,158 | 68 2 | 54 | 36 0 |
| 1634 | Pens, fountain and stylographic pen points, gold, steel, brass | 2,812 | 61 6 | 2,819 | 59 7 | 2,311 | 61 1 | 2,092 | 61 0 | 12,595 | 70 4 | 3,690 | 63 8 | 8,905 | 73 6 | 4 | 7 8 |
| 312 | Matches | 3,630 | 66 1 | 3,680 | 67 0 | 3,351 | 66 1 | 3,183 | 67 8 | 21,400 | 70 3 | 14,039 | 73 7 | 7,361 | 64 6 | 9 | 37 5 |
| 131 | Sugar refining, cane | 9,813 | 64 5 | 11,921 | 69 4 | 8,932 | 64 5 | 9,749 | 70 4 | 262,388 | 69 6 | 231,740 | 68 9 | 30,648 | 71 7 | 10 | 55 6 |
| 120 | Shortenings, vegetable cooking oils, and salad oils | 3,919 | 66 5 | 4,459 | 65 5 | 3,207 | 66 2 | 3,129 | 66 5 | 146,797 | 69 0 | 123,574 | 69 4 | 23,223 | 66 8 | 24 | 50 0 |
| 129 | Sugar, beet | 6,512 | 60 3 | 8,152 | 67 1 | 5,470 | 59 3 | 6,081 | 65 1 | 65,447 | 68 8 | 49,190 | 69 1 | 16,257 | 67 7 | 42 | 54 5 |
| 106 | Cereal preparations | 5,676 | 61 7 | 7,295 | 63 3 | 5,015 | 63 6 | 5,819 | 68 5 | 99,910 | 68 1 | 56,390 | 68 4 | 43,520 | 67 7 | 8 | 7 3 |
| 109 | Chocolate and cocoa products, not including confectionery | 6,008 | 64 0 | 6,446 | 62 2 | 5,353 | 64 6 | 5,175 | 64 7 | 63,058 | 67 8 | 45,874 | 69 1 | 17,184 | 64 5 | 4 | 9 1 |
| 1021 | Abrasive wheels, stones, paper, cloth, and related products | 5,500 | 63 3 | 8,690 | 67 9 | 4,277 | 63 1 | 5,944 | 71 2 | 36,280 | 67 4 | 12,515 | 60 4 | 23,765 | 71 7 | 6 | 6 4 |
| 1615 | Surgical and orthopedic appliances and related products | 4,697 | 50 3 | 5,412 | 50 3 | 3,591 | 50 6 | 3,116 | 49 5 | 41,552 | 67 3 | 27,327 | 75 7 | 14,225 | 55 4 | 9 | 2 9 |
| 308 | Excelsior | 769 | 51 6 | 800 | 50 2 | 436 | 52 5 | 320 | 50 3 | 1,638 | 67 0 | 337 | 61 8 | 1,001 | 70 9 | 9 | 18 8 |
| 404 | Card cutting and designing | 1,610 | 46 8 | 1,946 | 48 4 | 1,407 | 47 7 | 1,527 | 53 7 | 11,884 | 66 1 | 5,301 | 68 9 | 6,083 | 63 9 | 6 | 7 9 |
| 1110 | Blast-furnace products | 9,535 | 57 1 | 13,447 | 59 2 | 8,644 | 57 0 | 11,180 | 59 1 | 247,203 | 66 0 | 195,882 | 65 2 | 51,321 | 69 3 | 29 | 40 3 |
| 1209 | Gold, silver, and platinum, refining and alloying | 677 | 44 7 | 1,176 | 44 3 | 497 | 46 6 | 615 | 46 7 | 50,763 | 65 1 | 47,925 | 66 8 | 2,838 | 45 3 | 5 | 5 7 |
| 1218 | Smelting and refining, zinc | 5,393 | 55 7 | 7,366 | 59 0 | 4,858 | 54 9 | 5,924 | 57 7 | 44,223 | 64 0 | 28,384 | 65 1 | 15,841 | 61 9 | 10 | 38 5 |
| 1647 | Tobacco (chewing and smoking) and snuff | 5,641 | 51 0 | 5,189 | 49 7 | 5,229 | 51 9 | 4,282 | 56 1 | 86,023 | 63 5 | 58,992 | 65 6 | 27,031 | 59 4 | 10 | 8 7 |
| 1116 | Saws | 2,868 | 69 0 | 3,435 | 65 6 | 2,417 | 70 6 | 2,627 | 70 4 | 8,653 | 63 4 | 2,567 | 61 9 | 6,086 | 64 0 | 9 | 11 0 |
| 1211 | Needles, pins, hooks and eyes, slide and snap fasteners | 7,326 | 64 9 | 7,881 | 63 2 | 6,608 | 65 4 | 6,258 | 66 0 | 20,804 | 63 4 | 5,409 | 58 3 | 15,395 | 65 4 | 5 | 10 0 |
| 1018 | Sand-lime brick | 124 | 46 1 | 145 | 54 1 | 110 | 48 5 | 113 | 56 8 | 413 | 63 1 | 185 | 68 5 | 228 | 59 2 | 4 | 20 0 |
| 1001 | Asbestos, other than steam packing and pipe and boiler covering | 7,555 | 68 7 | 8,113 | 67 8 | 6,715 | 69 8 | 6,497 | 69 9 | 24,089 | 63 1 | 10,830 | 63 1 | 13,259 | 63 1 | 14 | 19 5 |
| 1631 | Optical goods | 7,509 | 63 7 | 10,137 | 68 2 | 5,919 | 61 2 | 6,962 | 67 1 | 20,939 | 62 3 | 5,710 | 51 6 | 15,229 | 67 6 | 7 | 7 0 |
| 1637 | Pipes (tobacco) | 1,443 | 59 3 | 1,728 | 63 3 | 1,345 | 60 0 | 1,500 | 65 7 | 3,844 | 62 2 | 1,093 | 55 3 | 2,751 | 65 0 | 5 | 17 2 |
| 503 | Engraving, chasing, etching, and die-sinking | 1,686 | 63 6 | 2,088 | 59 7 | 1,426 | 64 8 | 1,511 | 61 7 | 4,766 | 62 2 | 2,100 | 77 9 | 2,666 | 53 7 | 4 | 4 0 |
| 103 | Cut board, not made in paper mills | 553 | 69 2 | 760 | 69 8 | 448 | 71 3 | 482 | 75 2 | 2,288 | 61 9 | 1,215 | 62 5 | 1,073 | 61 4 | 4 | 25 0 |
| 2054 | Felt goods except woven felts | 2,212 | 55 7 | 2,413 | 54 7 | 2,052 | 57 4 | 2,015 | 58 6 | 14,539 | 61 3 | 8,090 | 59 9 | 6,449 | 63 1 | 9 | 22 5 |
| 607 | Candles | 468 | 52 0 | 618 | 57 4 | 304 | 51 1 | 327 | 54 6 | 2,892 | 61 1 | 1,466 | 61 1 | 1,426 | 61 1 | 4 | 17 4 |
| 1409 | Motorcycles, bicycles, and parts | 3,280 | 56 9 | 3,808 | 58 9 | 2,902 | 57 0 | 3,147 | 60 4 | 13,900 | 60 6 | 7,836 | 61 2 | 6,154 | 59 9 | 6 | 26 1 |
| 630 | Salt | 2,619 | 47 2 | 3,255 | 50 9 | 2,352 | 47 3 | 2,588 | 53 0 | 17,920 | 60 3 | 6,113 | 58 7 | 11,507 | 61 2 | 15 | 31 3 |
| 1222 | Watchcases | 1,115 | 61 1 | 1,264 | 63 0 | 1,198 | 59 4 | 1,194 | 62 9 | 4,069 | 58 3 | 1,507 | 54 6 | 2,562 | 60 7 | 4 | 13 8 |
| 220 | Artificial leather; oil cloth | 2,369 | 55 0 | 3,072 | 54 8 | 2,031 | 55 6 | 2,461 | 58 6 | 19,814 | 57 7 | 13,234 | 57 1 | 6,580 | 59 1 | 7 | 21 2 |
| 605 | Baking powder, yeast, and other leavening compounds | 2,133 | 63 5 | 4,285 | 67 8 | 1,690 | 63 4 | 2,954 | 69 4 | 18,478 | 57 1 | 7,807 | 54 7 | 10,591 | 59 0 | 11 | 23 9 |
| 1629 | Musical instruments: organs | 404 | 53 4 | 494 | 54 5 | 337 | 54 9 | 388 | 55 3 | 968 | 57 0 | 308 | 53 5 | 660 | 58 8 | 4 | 14 3 |
| 1213 | Silverware and plated ware | 5,980 | 50 4 | 6,879 | 48 3 | 5,162 | 50 6 | 5,633 | 50 8 | 24,524 | 56 6 | 7,296 | 47 9 | 17,228 | 61 2 | 9 | 6 5 |
| 1315 | Washing machines, wringers, driers, ironing machines | 5,019 | 48 9 | 6,582 | 51 8 | 4,288 | 49 1 | 5,307 | 53 9 | 34,936 | 56 9 | 20,639 | 55 8 | 14,297 | 56 2 | 6 | 14 6 |
| 1016 | Mirrors and other glass products made of purchased glass | 3,361 | 27 4 | 4,354 | 31 2 | 3,163 | 29 6 | 3,911 | 37 9 | 38,095 | 55 4 | 15,195 | 52 1 | 22,900 | 57 9 | 5 | 9 |
| 2173 | Suspenders, garters, and other elastic woven products | 1,424 | 45 0 | 1,372 | 48 5 | 1,209 | 44 5 | 888 | 45 4 | 8,034 | 54 8 | 4,368 | 51 4 | 3,666 | 59 5 | 4 | 5 4 |
| 1311 | Scales and balances | 1,180 | 47 2 | 1,980 | 47 4 | 1,070 | 43 6 | 1,178 | 41 7 | 7,311 | 54 8 | 1,921 | 50 7 | 5,429 | 56 5 | 5 | 8 9 |
| 1020 | Wallboard and plaster, except gypsum | 2,972 | 55 2 | 2,684 | 48 4 | 2,666 | 57 7 | 2,103 | 53 4 | 12,878 | 54 0 | 3,940 | 43 9 | 8,938 | 60 1 | 5 | 4 0 |
| 1401 | Aircraft and parts | 7,131 | 47 8 | 11,280 | 52 5 | 5,436 | 47 8 | 8,211 | 55 2 | 24,435 | 53 9 | 7,081 | 54 8 | 16,754 | 53 5 | 8 | 10 1 |
| 1118 | Springs, steel, except wire | 1,460 | 40 6 | 1,909 | 42 7 | 1,357 | 43 1 | 1,674 | 46 9 | 9,774 | 53 6 | 6,640 | 60 1 | 3,134 | 43 6 | 1 | 8 2 |
| 633 | Wood distillation and charcoal manufacture | 2,050 | 47 5 | 1,961 | 52 2 | 1,776 | 46 7 | 1,443 | 51 3 | 8,555 | 53 5 | 3,603 | 46 2 | 4,892 | 60 7 | 7 | 11 6 |
| 1203 | Collapsible tubes | 1,040 | 48 6 | 1,198 | 51 9 | 973 | 49 6 | 934 | 53 4 | 4,493 | 52 8 | 2,636 | 53 1 | 1,857 | 52 5 | 4 | 25 0 |
| 615 | Fireworks | 923 | 49 6 | 1,135 | 55 1 | 792 | 49 9 | 725 | 55 2 | 3,435 | 52 8 | 1,459 | 55 5 | 1,976 | 51 0 | 10 | 19 3 |
| 1651 | Wood pulling | 406 | 42 7 | 567 | 46 0 | 377 | 43 5 | 504 | 51 7 | 6,506 | 52 5 | 5,324 | 59 1 | **1,182** | 34 8 | 4 | 23 5 |

For footnotes, see end of table.

*trics, 1935, based on value of products* — Continued

sands of dollars[1]

| Persons employed | | Wages and salaries | | Wage earners | | Wages | | Value of product | | Cost of materials, etc. | | Value added by manufacture | | Number of establishments | | Industry | Industry number |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Number | Percent of industry | Amount | Percent of industry | Number | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Number | Percent of industry | | |
| Largest eight producers | | | | | | | | | | | | | | | | | |
| 210 SMALL INDUSTRIES — Continued | | | | | | | | | | | | | | | | | |
| 6,320 | 100 0 | 6,676 | 100 0 | 5,260 | 100 0 | 5,121 | 100 0 | 26,307 | 100 0 | 10,200 | 100 0 | 16,107 | 100 0 | 15 | 100 0 | Ammunition and related products | 102 |
| 278 | 87 1 | 284 | 88 8 | 246 | 88 5 | 197 | 87 9 | 1,132 | 89 5 | 586 | 90 9 | 546 | 87 8 | 8 | 42 1 | China firing and decorating, not done in potteries | 1003 |
| 265 | 96 0 | 268 | 97 5 | 229 | 96 2 | 189 | 97 9 | 687 | 97 0 | 310 | 98 4 | 377 | 95 9 | 8 | 72 8 | Combs and hairpins, other than metal and rubber | 1009 |
| 2,476 | 95 5 | 3,030 | 95 8 | 2,217 | 95 6 | 2,547 | 96 1 | 58 592 | 97 2 | 47,411 | 97 1 | 11,181 | 97 6 | 21 | 84 0 | Oil, cake, and meal, linseed | 623 |
| 661 | 93 4 | 940 | 94 2 | 536 | 94 2 | 565 | 94 0 | 1,719 | 96 7 | 3,275 | 96 9 | 2,444 | 96 3 | 12 | 57 1 | Drug grinding | 612 |
| 324 | 100 0 | 420 | 100 0 | 256 | 100 0 | 261 | 100 0 | 2,122 | 100 0 | 942 | 100 0 | 1,180 | 100 0 | 9 | 100 0 | Graphite, ground and refined | 1010 |
| 3,039 | 94 4 | 3,612 | 94 8 | 2,779 | 94 7 | 2,912 | 95 5 | 8,733 | 94 9 | 2,112 | 94 6 | 6,601 | 97 0 | 10 | 45 5 | Tubes | 1105 |
| 198 | 100 0 | 160 | 100 0 | 58 | 100 0 | 55 | 100 0 | 912 | 100 0 | 286 | 100 0 | 626 | 100 0 | 15 | 100 0 | Bluing | 605 |
| 1,021 | 96 3 | 1,234 | 96 4 | 780 | 96 4 | 770 | 96 3 | 5,230 | 97 5 | 1,172 | 97 3 | 2,058 | 97 6 | 8 | 57 2 | Safes and vaults | 1115 |
| 483 | 93 2 | 647 | 94 0 | 355 | 94 2 | 357 | 93 9 | 3,167 | 93 6 | 1,320 | 93 3 | 1,847 | 93 9 | 8 | 36 4 | Ink, writing | 619 |
| 4,790 | 90 7 | 6,797 | 91 1 | 4,178 | 91 4 | 5,251 | 93 0 | 37,845 | 93 1 | 15,807 | 93 0 | 22,038 | 93 1 | 44 | 58 1 | Explosives | 613 |
| 5,044 | 92 3 | 6,041 | 91 8 | 4,198 | 92 6 | 5,105 | 92 9 | 12,037 | 92 1 | 4,163 | 93 4 | 8,874 | 92 1 | 10 | 15 7 | Firearms | 1106 |
| 19,377 | 100 0 | 19,837 | 100 0 | 17,246 | 100 0 | 16,113 | 100 0 | 53,162 | 100 0 | 20,730 | 100 0 | 32,432 | 100 0 | 12 | 100 0 | Boots and shoes, rubber | 801 |
| 6,836 | 100 0 | 9,350 | 100 0 | 6,410 | 100 0 | 8,165 | 100 0 | 52,308 | 100 0 | 28,942 | 100 0 | 23,456 | 100 0 | 16 | 100 0 | Asphalted-felt-base floor covering; linoleum | 222 |
| 1,829 | 89 7 | 2,185 | 90 0 | 1,648 | 90 2 | 1,762 | 91 0 | 13,647 | 92 1 | 4,746 | 89 0 | 8,899 | 93 9 | 46 | 83 6 | Bone black, carbon black, and lampblack | 606 |
| 8,002 | 92 9 | 11,130 | 93 7 | 6,807 | 92 8 | 7,934 | 94 4 | 98,499 | 95 0 | 66,608 | 94 8 | 31,891 | 95 5 | 20 | 55 6 | Corn sirup, corn sugar, corn oil, and starch | 113 |
| 4,767 | 83 8 | 6,796 | 89 9 | 3,215 | 84 9 | 3,697 | 84 9 | 30,553 | 87 0 | 9,758 | 86 8 | 20,795 | 87 1 | 264 | 80 0 | Compressed and liquefied gases | 610 |
| 1,418 | 93 8 | 1,875 | 94 1 | 1,111 | 94 5 | 1,238 | 95 0 | 31,110 | 96 0 | 22,298 | 95 7 | 8,812 | 96 7 | 10 | 71 4 | Oleomargarine, not made in meat-packing establishments | 124 |
| 8,088 | 93 0 | 10,810 | 93 4 | 7,006 | 93 3 | 8,457 | 93 4 | 20,471 | 90 4 | 5,896 | 86 5 | 14,075 | 84 7 | 9 | 23 1 | Sewing machines and attachments | 1312 |
| 13,256 | 85 8 | 20,086 | 86 7 | 10,370 | 86 4 | 13,921 | 88 1 | 62,821 | 84 9 | 15,325 | 78 6 | 47,496 | 90 3 | 15 | 12 7 | Photographic apparatus and materials and projection apparatus. | 1036 |
| 943 | 85 3 | 1,289 | 87 9 | 709 | 88 0 | 871 | 90 0 | 4,664 | 87 3 | 2,110 | 85 4 | 2,554 | 80 0 | 8 | 32 0 | Fire extinguishers, chemical | 1206 |
| 2,976 | 88 3 | 3,670 | 87 4 | 2,711 | 89 4 | 2,485 | 89 7 | 22,612 | 93 2 | 6,442 | 91 8 | 16,170 | 88 6 | 11 | 32 4 | Cork products | 307 |
| 3,101 | 79 6 | 3,556 | 78 3 | 2,748 | 81 3 | 2,834 | 82 2 | 22,728 | 83 4 | 7,623 | 85 5 | 15,100 | 86 9 | 12 | 58 3 | Gypsum products | 1022 |
| 18,330 | 83 0 | 21,130 | 82 4 | 16,115 | 83 6 | 17,103 | 84 1 | 87,060 | 88 7 | 49,215 | 84 2 | 37,845 | 82 9 | 21 | 11 8 | Aluminum products | 1201 |
| 556 | 88 5 | 483 | 88 8 | 192 | 88 3 | 353 | 87 6 | 1,559 | 87 4 | 830 | 86 5 | 729 | 88 5 | 9 | 34 3 | Gold leaf and foil | 1208 |
| 1,164 | 78 6 | 1,829 | 78 6 | 867 | 79 1 | 1,146 | 79 8 | 6,603 | 87 4 | 3,344 | 81 0 | 3,262 | 76 8 | 12 | 25 0 | Soda fountains and accessories | 1041 |
| 12,568 | 72 5 | 16,173 | 72 2 | 10,394 | 73 7 | 12,038 | 78 5 | 198,804 | 88 1 | 114,921 | 82 4 | 83,883 | 84 1 | 24 | 10 1 | Soaps | 631 |
| 18,928 | 77 1 | 24,317 | 76 6 | 16,687 | 77 7 | 20,059 | 77 9 | 84,473 | 84 0 | 53,792 | 87 2 | 30,681 | 79 0 | 72 | 18 0 | Cars, electric and steam railroad | 1105 |
| 3,480 | 76 2 | 3,657 | 76 7 | 2,861 | 75 7 | 2,646 | 77 2 | 11,519 | 82 8 | 4,303 | 74 3 | 10,513 | 86 9 | 8 | 15 7 | Pens, fountain and stylographic, pen points, gold, steel, brass | 1034 |
| 4,797 | 87 3 | 4,755 | 86 6 | 4,178 | 88 2 | 4,152 | 88 5 | 25,789 | 91 5 | 17,636 | 92 7 | 10,143 | 89 0 | 15 | 62 5 | Matches | 312 |
| 12,830 | 84 1 | 15,004 | 87 3 | 11,609 | 85 9 | 12,158 | 87 4 | 355,422 | 88 3 | 295,772 | 88 0 | 37,350 | 91 0 | 14 | 77 8 | Sugar refining, cane | 131 |
| 4,900 | 83 1 | 5,626 | 82 7 | 3,997 | 82 5 | 3,880 | 82 1 | 182,644 | 85 9 | 153,630 | 86 3 | 29,013 | 83 1 | 31 | 61 6 | Shortenings, vegetable cooking oils, and salad oils. | 120 |
| 9,181 | 85 0 | 10,986 | 87 0 | 7,844 | 85 0 | 8,201 | 87 8 | 85,081 | 89 4 | 64,082 | 93 1 | 20,999 | 87 4 | 62 | 80 5 | Sugar, beet | 129 |
| 6,851 | 74 4 | 8,706 | 78 5 | 6,085 | 77 1 | 6,963 | 81 7 | 120,502 | 82 2 | 65,054 | 78 9 | 55,598 | 86 4 | 15 | 13 6 | Cereal preparations | 106 |
| 7,243 | 77 2 | 7,763 | 74 9 | 6,458 | 77 9 | 6,156 | 77 0 | 72,131 | 77 5 | 32,026 | 78 3 | 20 118 | 75 5 | 8 | 18 2 | Chocolate and cocoa products, not including confectionery | 109 |
| 6,048 | 69 6 | 9,414 | 73 5 | 4,712 | 69 5 | 6,110 | 77 1 | 40,014 | 74 3 | 14,248 | 68 7 | 25,766 | 77 8 | 10 | 10 6 | Abrasive wheels, stones, paper, cloth, and related products | 1021 |
| 5,456 | 58 4 | 6,233 | 57 9 | 4,207 | 59 3 | 3,638 | 57 9 | 46,788 | 75 1 | 30 044 | 83 2 | 16,344 | 63 7 | 15 | 4 9 | Surgical and orthopedic appliances and related products. | 1045 |
| 564 | 62 1 | 480 | 71 4 | 515 | 62 0 | 371 | 70 3 | 1,867 | 76 4 | 741 | 71 9 | 1,126 | 79 7 | 13 | 27 1 | Excelsior | 308 |
| 2,167 | 61 9 | 2,609 | 64 9 | 1,829 | 62 0 | 1,919 | 67 4 | 13,377 | 77 7 | 6,168 | 80 1 | 7,209 | 75 7 | 10 | 13 2 | Card cutting and designing | 401 |
| 12,071 | 72 3 | 16,956 | 71 6 | 11,012 | 72 6 | 14,166 | 74 9 | 310,230 | 82 8 | 250,691 | 83 4 | 59,539 | 80 4 | 40 | 55 5 | Blast-furnace products | 1110 |
| 891 | 58 8 | 1,497 | 55 4 | 619 | 61 8 | 768 | 58 3 | 61,955 | 79 4 | 58,114 | 84 1 | 3,841 | 56 5 | 9 | 10 2 | Gold, silver, and platinum, refining and alloying | 1029 |
| 7,653 | 79 1 | 10,193 | 81 6 | 6,982 | 79 0 | 8,386 | 84 3 | 56,821 | 82 2 | 36,114 | 82 9 | 20,707 | 81 0 | 15 | 57 7 | Smelting and refining, zinc | 1218 |
| 8,067 | 73 0 | 7,665 | 73 4 | 7,112 | 73 6 | 5,929 | 77 7 | 114,197 | 84 3 | 76,276 | 84 8 | 37,921 | 83 3 | 16 | 13 9 | Tobacco (chewing and smoking) and snuff | 1047 |
| 3,186 | 76 7 | 3,961 | 75 6 | 2,673 | 78 0 | 2,923 | 78 3 | 10,113 | 79 3 | 3,145 | 75 9 | 7,228 | 76 5 | 15 | 18 3 | Saws | 1116 |
| 8,189 | 72 5 | 8,978 | 72 0 | 7,311 | 72 1 | 6,955 | 73 3 | 25,018 | 71 2 | 6,582 | 70 9 | 18,436 | 78 3 | 9 | 18 0 | Needles, pins, hooks and eyes, slide and snap fasteners. | 1211 |
| 188 | 69 9 | 198 | 73 9 | 164 | 72 2 | 118 | 74 4 | 518 | 79 2 | 222 | 82 2 | 296 | 76 9 | 8 | 10 0 | Sand-lime brick | 1018 |
| 8,859 | 80 6 | 9,430 | 78 8 | 7,920 | 82 3 | 7,585 | 81 6 | 20,921 | 78 1 | 13,662 | 79 6 | 16,259 | 77 4 | 19 | 26 4 | Asbestos, other than steam packing and pipe and boiler covering. | 1001 |
| 8,473 | 71 9 | 11,195 | 75 3 | 6,808 | 70 4 | 7,792 | 75 4 | 23,739 | 70 7 | 6,818 | 61 6 | 16,921 | 75 1 | 14 | 13 0 | Optical goods | 1031 |
| 1,866 | 76 7 | 2,261 | 82 8 | 1,720 | 76 8 | 1,885 | 82 6 | 5,040 | 81 7 | 1,502 | 77 9 | 3,541 | 84 5 | 9 | 31 0 | Pipes (tobacco) | 1037 |
| 2,021 | 75 8 | 2,584 | 72 4 | 1,703 | 77 4 | 1,798 | 73 4 | 5,773 | 75 4 | 2,371 | 87 9 | 3,402 | 68 5 | 8 | 8 0 | Engraving, chasing, etching, and die sinking | 503 |
| 689 | 86 2 | 972 | 89 3 | 539 | 85 8 | 565 | 88 1 | 3,290 | 89 2 | 1,705 | 90 7 | 1,531 | 87 6 | 9 | 56 2 | Cardboard, not made in paper mills | 103 |
| 3,071 | 77 3 | 3,372 | 76 5 | 2,813 | 78 7 | 2,728 | 79 3 | 19,193 | 81 0 | 10,739 | 79 7 | 8,444 | 82 7 | 14 | 35 0 | Felt goods, except woven felts | 2051 |
| 697 | 77 4 | 873 | 81 1 | 553 | 77 6 | 485 | 81 0 | 3,895 | 82 3 | 1,936 | 80 7 | 1,959 | 83 9 | 8 | 34 8 | Candles | 607 |
| 4,360 | 77 3 | 5,311 | 80 9 | 3,012 | 76 8 | 4,258 | 81 7 | 20,789 | 80 1 | 12,117 | 94 6 | 8,672 | 81 4 | 10 | 45 5 | Motorcycles, bicycles, and parts | 1109 |
| 3,719 | 67 0 | 4,203 | 65 7 | 3,348 | 67 3 | 3,205 | 67 5 | 25,254 | 78 2 | 8,309 | 76 0 | 16,945 | 79 5 | 20 | 41 7 | Salt | 630 |
| 2,030 | 85 9 | 2,631 | 85 7 | 1,734 | 86 0 | 2,022 | 86 8 | 5,635 | 80 7 | 2,103 | 76 2 | 3,532 | 85 6 | 8 | 27 6 | Watchcases | 1222 |
| 3,186 | 73 9 | 4,083 | 72 9 | 2,737 | 75 0 | 3,218 | 76 6 | 25,872 | 75 4 | 17,819 | 76 9 | 8,053 | 72 3 | 11 | 33 3 | Artificial leather; oil cloth | 220 |
| 2,712 | 80 8 | 5,122 | 81 0 | 2,181 | 81 8 | 3,519 | 82 3 | 26,806 | 82 9 | 11,935 | 82 9 | 14 871 | 82 9 | 15 | 32 6 | Baking powder, yeast, and other leavening compounds | 603 |
| 593 | 78 3 | 721 | 79 6 | 489 | 79 6 | 490 | 80 2 | 1,316 | 77 5 | 448 | 77 8 | 868 | 77 3 | 8 | 28 6 | Musical instruments, organs | 1029 |
| 7,411 | 62 5 | 8,610 | 60 5 | 6,392 | 62 7 | 6,805 | 61 4 | 29,484 | 68 0 | 9,326 | 61 2 | 20,158 | 71 6 | 13 | 9 4 | Silverware and plated ware | 1213 |
| 7,922 | 77 1 | 10,163 | 80 6 | 6,795 | 77 7 | 8,127 | 82 5 | 40,726 | 79 7 | 20,567 | 79 9 | 20,159 | 79 6 | 11 | 26 8 | Washing machines, wringers, driers, ironing machines | 1315 |
| 4,202 | 34 3 | 5,213 | 37 3 | 3,909 | 36 6 | 4,571 | 42 0 | 41,095 | 59 8 | 16,683 | 57 2 | 24,412 | 61 7 | 14 | 2 6 | Mirrors and other glass products made of purchased glass | 1016 |
| 1,893 | 59 8 | 1,795 | 63 1 | 1,620 | 59 6 | 1,170 | 59 8 | 9,921 | 67 7 | 5,519 | 65 0 | 4,402 | 71 4 | 8 | 10 8 | Suspenders, garters, and other elastic woven products | 2173 |
| 2,051 | 62 7 | 2,735 | 65 2 | 1,501 | 60 9 | 1,659 | 63 0 | 9,758 | 72 9 | 2,578 | 68 1 | 7,180 | 74 8 | 9 | 16 1 | Scales and balances | 1311 |
| 3,832 | 71 1 | 3,787 | 68 3 | 3,427 | 74 2 | 2,968 | 75 1 | 16,716 | 70 1 | 5,442 | 60 6 | 11,274 | 75 8 | 9 | 7 3 | Wallboard and plaster, except gypsum | 1020 |
| 9,851 | 66 0 | 15,362 | 71 5 | 7,418 | 65 2 | 10,884 | 73 1 | 33,008 | 72 8 | 10,127 | 72 3 | 22,881 | 73 0 | 13 | 16 1 | Aircraft and parts | 1401 |
| 2,237 | 62 2 | 2,834 | 61 5 | 2,045 | 65 0 | 2,375 | 66 6 | 12,967 | 71 1 | 8,537 | 77 3 | 4,430 | 61 6 | 8 | 16 4 | Springs, steel, except wire | 1118 |
| 2,680 | 62 1 | 2,515 | 66 9 | 2,367 | 62 2 | 1,917 | 68 1 | 10,895 | 68 2 | 4,993 | 63 0 | 5,902 | 74 3 | 11 | 18 3 | Wood distillation and charcoal manufacture | 633 |
| 1,685 | 78 8 | 1,842 | 79 8 | 1,556 | 79 3 | 1,427 | 81 5 | 9,749 | 79 4 | 5,973 | 80 0 | 3,776 | 78 4 | 8 | 50 0 | Collapsible tubes | 1203 |
| 1,410 | 75 8 | 1,558 | 75 6 | 1,244 | 77 7 | 1,017 | 77 7 | 4,972 | 76 4 | 2,007 | 76 4 | 2,965 | 76 5 | 20 | 38 5 | Fireworks | 615 |
| 721 | 75 8 | 930 | 75 4 | 662 | 76 4 | 777 | 79 7 | 3,759 | 78 7 | 1,452 | 82 7 | 2,307 | 68 0 | 8 | 17 0 | Wool pulling | 1654 |

TABLE II.—*Concentration in manufacturing indus*

[Values in thou

| Industry number | Industry | Largest four producers | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Persons employed | | Wages and salaries | | Wage earners | | Wages | | Value of product | | Cost of materials, etc.[1] | | Value added by manufacture[2] | | Number of establishments | |
| | | Number | Percent of industry | Amount | Percent of industry | Number | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Number | Percent of industry |
| | | 210 SMALL INDUSTRIES—Continued | | | | | | | | | | | | | | | |
| 1603 | Artists' materials | 184 | 35.0 | 271 | 38.0 | 116 | 33.1 | 125 | 37.1 | 1,271 | 52.3 | 774 | 63.4 | 497 | 41.1 | 4 | 8.5 |
| 1614 | Foundry supplies | 173 | 29.9 | 291 | 31.6 | 124 | 31.0 | 164 | 36.8 | 3,302 | 52.0 | 1,858 | 53.9 | 1,534 | 49.9 | 5 | 10.9 |
| 1611 | Dentists' equipment and supplies | 2,292 | 51.1 | 2,914 | 49.6 | 1,889 | 53.7 | 2,010 | 55.4 | 11,847 | 51.6 | 3,833 | 42.0 | 8,014 | 57.9 | 7 | 8.0 |
| 133 | Liquors, distilled | 4,231 | 44.0 | 4,469 | 39.4 | 3,850 | 47.2 | 3,891 | 46.5 | 78,231 | 51.2 | 36,631 | 47.9 | 41,600 | 54.5 | 13 | 9.9 |
| 310 | Lasts and related products | 885 | 47.8 | 1,190 | 46.4 | 731 | 48.9 | 950 | 49.7 | 2,827 | 51.2 | 716 | 49.1 | 2,111 | 52.0 | 13 | 27.1 |
| 1630 | Musical instruments: pianos | 2,435 | 53.0 | 2,611 | 53.2 | 2,195 | 53.4 | 2,170 | 53.0 | 6,477 | 51.1 | 2,242 | 40.0 | 4,235 | 59.7 | 4 | 11.1 |
| 319 | Wood preserving | 3,816 | 38.8 | 2,909 | 35.0 | 3,633 | 40.4 | 2,562 | 38.6 | 40,599 | 50.5 | 32,184 | 53.9 | 8,415 | 40.8 | 55 | 29.7 |
| 618 | Ink, printing | 1,346 | 40.2 | 2,327 | 38.0 | 1,006 | 42.4 | 1,449 | 44.8 | 16,919 | 49.0 | 10,162 | 54.7 | 6,757 | 42.4 | 42 | 22.0 |
| 1632 | Paving materials, blocks (except brick and stone) and mixtures | 1,061 | 39.9 | 1,527 | 42.8 | 989 | 44.3 | 1,335 | 53.1 | 8,754 | 48.9 | 5,036 | 50.5 | 3,718 | 47.1 | 31 | 23.5 |
| 701 | Coke-oven products | 7,682 | 41.7 | 10,451 | 40.6 | 6,870 | 41.2 | 8,543 | 39.6 | 116,463 | 48.8 | 90,908 | 50.4 | 25,555 | 43.9 | 20 | 22.7 |
| 1617 | Hair work | 231 | 37.4 | 332 | 42.8 | 189 | 37.7 | 152 | 34.8 | 1,326 | 48.5 | 447 | 43.0 | 879 | 51.8 | 4 | 9.3 |
| 1113 | Nails, spikes, etc. | 1,290 | 51.5 | 1,530 | 50.2 | 1,160 | 53.2 | 1,263 | 54.4 | 4,669 | 48.3 | 2,015 | 46.6 | 2,654 | 49.8 | 6 | 14.0 |
| 115 | Flavoring extracts, flavoring sirups, and related products | 499 | 10.9 | 837 | 12.5 | 320 | 11.0 | 360 | 13.6 | 32,369 | 47.7 | 10,809 | 37.0 | 21,560 | 55.7 | 12 | 2.9 |
| 1128 | Wrought pipe, welded and heavy riveted | 4,679 | 39.7 | 6,054 | 41.1 | 4,375 | 40.8 | 5,302 | 45.0 | 34,901 | 47.4 | 20,255 | 48.2 | 14,736 | 46.3 | 8 | 16.7 |
| 1403 | Carriages and sleds, children's | 2,680 | 49.1 | 2,797 | 51.7 | 2,491 | 50.6 | 2,471 | 56.6 | 7,302 | 47.0 | 3,473 | 46.8 | 3,829 | 47.3 | 6 | 10.9 |
| 1644 | Steam and other packing, pipe and boiler covering, and gaskets, n. e. c. | 2,965 | 51.5 | 3,310 | 46.9 | 2,576 | 53.9 | 2,492 | 52.6 | 11,367 | 46.9 | 5,807 | 49.4 | 5,560 | 44.5 | 9 | 7.3 |
| 1404 | Carriages, wagons, sleighs, and sleds | 721 | 38.8 | 754 | 42.7 | 611 | 38.4 | 564 | 43.9 | 3,134 | 45.8 | 1,806 | 49.1 | 1,328 | 42.0 | 4 | 8.9 |
| 1633 | Pencils, lead (including mechanical), and crayons | 2,857 | 46.9 | 3,098 | 49.0 | 2,451 | 47.3 | 2,187 | 51.7 | 8,973 | 44.9 | 3,740 | 45.3 | 5,233 | 44.6 | 5 | 10.6 |
| 122 | Malt | 750 | 43.7 | 1,505 | 42.0 | 644 | 44.8 | 1,040 | 44.3 | 33,536 | 41.6 | 25,255 | 44.8 | 8,281 | 44.3 | 13 | 24.1 |
| 111 | Condensed and evaporated milk | 3,960 | 40.0 | 4,153 | 38.1 | 3,494 | 41.3 | 3,301 | 39.7 | 76,536 | 44.6 | 58,539 | 44.7 | 17,997 | 44.4 | 111 | 23.8 |
| 2171 | Gloves and mittens, cloth or cloth and leather combined | 3,868 | 49.0 | 2,135 | 41.6 | 3,781 | 46.9 | 2,011 | 44.8 | 8,323 | 43.9 | 4,631 | 45.0 | 3,692 | 42.7 | 22 | 19.2 |
| 1638 | Roofing, built-up and roll; asphalt shingles; roof coatings | 3,414 | 46.4 | 3,878 | 44.6 | 3,051 | 47.1 | 3,053 | 45.7 | 32,581 | 42.8 | 18,310 | 42.6 | 14,271 | 43.0 | 20 | 18.5 |
| 625 | Oils not elsewhere classified | 779 | 34.4 | 1,012 | 34.4 | 666 | 37.6 | 777 | 42.8 | 17,800 | 42.6 | 12,855 | 44.4 | 4,945 | 38.7 | 10 | 9.4 |
| 1217 | Smelting and refining, nonferrous metals, n. e. c. | 2,039 | 45.0 | 2,431 | 40.2 | 1,700 | 47.1 | 1,631 | 71.2 | 26,691 | 42.6 | 21,639 | 41.6 | 5,052 | 47.6 | 16 | 16.1 |
| 1102 | Cast-iron pipe and fittings | 1,879 | 33.5 | 4,037 | 31.8 | 4,571 | 33.8 | 3,365 | 32.4 | 16,056 | 42.4 | 6,665 | 45.0 | 9,391 | 40.7 | 12 | 16.9 |
| 136 | Liquors, rectified or blended | 2,974 | 41.6 | 2,324 | 34.5 | 2,860 | 48.6 | 2,135 | 47.2 | 41,873 | 42.2 | 20,532 | 36.2 | 21,341 | 50.3 | 6 | 2.3 |
| 303 | Boxes, cigar, wooden and part wooden | 1,264 | 37.5 | 1,017 | 40.0 | 1,211 | 38.2 | 803 | 40.1 | 2,591 | 42.1 | 780 | 35.0 | 1,811 | 46.0 | 11 | 15.2 |
| 1628 | Musical instruments and parts and materials, n.e. c. | 1,378 | 39.1 | 1,854 | 43.9 | 1,074 | 37.5 | 1,298 | 43.1 | 3,762 | 41.5 | 963 | 35.3 | 2,799 | 44.2 | 4 | 4.3 |
| 1627 | Musical-instrument parts and materials piano and organ | 637 | 46.3 | 600 | 41.2 | 587 | 48.2 | 459 | 44.6 | 1,319 | 41.4 | 529 | 43.2 | 790 | 40.3 | 4 | 11.8 |
| 411 | Wall paper | 2,208 | 45.2 | 2,505 | 41.9 | 1,950 | 45.7 | 1,998 | 44.5 | 8,145 | 41.4 | 4,232 | 42.8 | 3,913 | 40.1 | 8 | 20.0 |
| 1224 | Jewelers' findings and materials | 611 | 19.7 | 927 | 24.0 | 533 | 20.0 | 693 | 25.4 | 6,988 | 40.7 | 5,317 | 48.5 | 1,671 | 26.9 | 4 | 5.5 |
| 132 | Vinegar and cider | 500 | 39.5 | 606 | 40.3 | 435 | 42.0 | 432 | 43.1 | 3,440 | 40.4 | 2,054 | 43.2 | 1,386 | 36.9 | 26 | 20.8 |
| 1126 | Wire drawn from purchased rods | 8,761 | 36.2 | 11,592 | 37.7 | 8,135 | 37.8 | 9,892 | 40.5 | 51,202 | 40.2 | 28,396 | 41.5 | 22,866 | 38.8 | 15 | 17.0 |
| 901 | Belting and packing, leather | 966 | 31.8 | 1,014 | 25.3 | 859 | 36.4 | 791 | 31.4 | 8,581 | 39.9 | 4,651 | 40.3 | 3,930 | 39.4 | 6 | 3.2 |
| 1653 | Beauty-shop equipment, except furniture | 970 | 36.5 | 966 | 31.6 | 853 | 39.1 | 666 | 33.8 | 4,955 | 39.6 | 2,001 | 39.9 | 2,954 | 39.3 | 4 | 4.9 |
| 604 | Blacking, stains, and dressings | 581 | 26.7 | 773 | 23.7 | 471 | 31.4 | 419 | 28.6 | 7,027 | 39.2 | 3,393 | 40.5 | 3,634 | 38.1 | 5 | 3.0 |
| 127 | Rice cleaning and polishing | 1,023 | 39.2 | 993 | 37.3 | 800 | 39.5 | 483 | 36.8 | 17,018 | 38.6 | 12,488 | 36.5 | 4,530 | 45.8 | 16 | 23.5 |
| 208 | Lace goods | 2,896 | 32.9 | 3,784 | 35.0 | 2,589 | 33.0 | 3,067 | 35.4 | 10,492 | 38.2 | 3,227 | 33.4 | 7,265 | 40.7 | 4 | 7.2 |
| 1202 | Clocks, watches, etc., materials and parts except watchcases | 7,515 | 37.0 | 8,521 | 37.7 | 6,905 | 38.3 | 7,172 | 39.2 | 23,058 | 37.7 | 9,635 | 42.7 | 13,423 | 34.7 | 8 | 10.5 |
| 1623 | Lapidary work | 68 | 33.5 | 116 | 39.3 | 60 | 39.3 | 93 | 46.2 | 771 | 37.6 | 535 | 43.2 | 236 | 29.1 | 4 | 6.6 |
| 616 | Glue and gelatin | 1,492 | 38.1 | 1,857 | 35.7 | 1,325 | 40.8 | 1,430 | 40.5 | 10,494 | 37.3 | 5,154 | 34.2 | 5,340 | 40.9 | 14 | 18.9 |
| 219 | Fabricated textile products, n. e. c. | 5,432 | 26.0 | 5,288 | 25.2 | 4,791 | 26.9 | 3,758 | 26.2 | 54,925 | 37.2 | 44,034 | 41.2 | 10,891 | 26.7 | 33 | 4.2 |
| 1108 | Galvanizing and other coating | 577 | 41.1 | 747 | 39.6 | 526 | 43.8 | 477 | 37.6 | 1,926 | 37.1 | 630 | 31.5 | 1,296 | 40.6 | 4 | 6.2 |
| 1120 | Steel barrels, kegs, and drums | 2,898 | 44.7 | 3,218 | 42.2 | 2,646 | 45.9 | 2,667 | 45.7 | 12,829 | 37.0 | 7,455 | 35.4 | 5,374 | 39.5 | 7 | 10.9 |
| 1103 | Cutlery (not including silver and plated cutlery) and edge tools | 2,742 | 17.7 | 3,152 | 17.7 | 2,450 | 17.8 | 2,320 | 17.1 | 18,548 | 36.3 | 3,438 | 27.3 | 15,110 | 39.1 | 5 | 1.9 |
| 1042 | Sporting and athletic goods, not including firearms or ammunition | 3,837 | 34.0 | 4,020 | 33.4 | 3,336 | 34.5 | 3,191 | 35.4 | 12,536 | 36.0 | 6,484 | 39.1 | 6,052 | 33.1 | 10 | 5.1 |
| 512 | Stereotyping and electrotyping, not done in printing establishments | 1,519 | 25.5 | 4,327 | 31.0 | 1,049 | 23.8 | 2,023 | 23.9 | 9,693 | 36.0 | 1,260 | 33.9 | 8,433 | 36.4 | 11 | 5.4 |
| 1607 | Carbon paper and inked ribbons | 679 | 34.7 | 1,103 | 36.6 | 505 | 35.4 | 591 | 36.3 | 5,230 | 35.6 | 2,732 | 36.4 | 2,498 | 34.7 | 4 | 7.1 |
| 621 | Mucilage, paste, and other adhesives, except glue and rubber cement | 128 | 26.9 | 226 | 30.5 | 79 | 29.6 | 92 | 31.8 | 1,263 | 35.6 | 497 | 30.2 | 796 | 40.0 | 4 | 6.1 |
| 1613 | Feathers, plumes, and manufactures thereof | 139 | 20.6 | 155 | 25.4 | 121 | 21.1 | 99 | 23.4 | 578 | 35.1 | 300 | 49.1 | 278 | 26.9 | 4 | 5.5 |
| 128 | Sausage, meat puddings, headcheese, etc | 2,963 | 27.4 | 3,103 | 22.5 | 2,707 | 29.5 | 2,588 | 25.7 | 45,707 | 35.1 | 39,330 | 38.0 | 8,377 | 23.9 | 131 | 16.2 |
| 1622 | Jewelry and instrument cases | 1,088 | 42.5 | 1,105 | 42.1 | 998 | 43.1 | 842 | 42.5 | 2,214 | 34.8 | 693 | 29.5 | 1,521 | 37.9 | 4 | 5.5 |
| 401 | Bags, paper, exclusive of those made in paper mills | 3,175 | 31.6 | 2,728 | 26.0 | 3,032 | 33.2 | 2,456 | 30.6 | 22,790 | 34.8 | 14,647 | 35.1 | 8,143 | 34.2 | 14 | 15.1 |
| 1019 | Statuary and art goods (except concrete), factory product | 182 | 20.3 | 291 | 26.6 | 135 | 18.8 | 183 | 22.8 | 999 | 34.6 | 158 | 23.7 | 841 | 37.8 | 4 | 3.8 |
| 1114 | Plumbers' supplies, not including pipe or vitreous-china sanitary ware | 7,297 | 31.8 | 8,381 | 31.2 | 6,652 | 33.1 | 7,365 | 34.5 | 25,939 | 34.3 | 10,095 | 31.7 | 15,844 | 36.2 | 10 | 4.0 |
| 1651 | Window shades (textile and paper) and fixtures | 1,010 | 27.3 | 1,132 | 27.6 | 840 | 28.0 | 700 | 25.8 | 6,920 | 34.0 | 4,626 | 37.9 | 2,294 | 28.3 | 21 | 6.6 |
| 632 | Tanning materials, natural dyestuffs, mordants, etc | 1,086 | 30.5 | 1,379 | 24.4 | 855 | 32.3 | 818 | 31.1 | 11,417 | 33.9 | 7,036 | 35.7 | 4,381 | 31.4 | 20 | 13.0 |
| 504 | Engraving, steel, copper-plate, and wood, and plate printing | 1,615 | 24.3 | 2,999 | 32.0 | 1,372 | 25.9 | 2,274 | 34.9 | 6,820 | 33.9 | 1,165 | 25.4 | 5,655 | 36.4 | 6 | 1.6 |
| 117 | Food preparations not elsewhere classified | 3,401 | 19.6 | 3,154 | 16.3 | 3,108 | 22.0 | 2,639 | 21.8 | 75,135 | 33.7 | 65,526 | 41.3 | 9,609 | 15.0 | 167 | 16.2 |
| 1101 | Bolts, nuts, washers, and rivets | 4,758 | 32.5 | 6,099 | 33.5 | 4,147 | 33.2 | 4,614 | 34.5 | 19,285 | 33.6 | 10,445 | 36.0 | 8,840 | 31.1 | 15 | 10.9 |
| 405 | Envelopes | 3,757 | 35.2 | 4,422 | 33.2 | 3,230 | 35.7 | 3,196 | 35.2 | 14,663 | 33.6 | 7,847 | 37.8 | 6,816 | 29.8 | 17 | 10.3 |
| 130 | Sugar, cane, not including products of refineries | 896 | 24.1 | 605 | 26.8 | 662 | 22.5 | 430 | 28.1 | 8,811 | 33.5 | 6,065 | 33.2 | 2,746 | 34.4 | 9 | 12.2 |
| 1104 | Doors, shutters, and window sash and frames, molding, and trim, metal | 1,692 | 28.3 | 2,213 | 28.5 | 1,315 | 29.0 | 1,458 | 28.6 | 7,564 | 33.3 | 3,407 | 34.2 | 4,157 | 32.5 | 7 | 5.2 |
| 1605 | Brushes, other than rubber | 1,682 | 20.5 | 2,054 | 22.3 | 1,291 | 19.0 | 1,117 | 18.6 | 14,018 | 33.3 | 4,105 | 22.1 | 9,913 | 38.9 | 6 | 2.4 |
| 622 | Oil, cake, and meal, cottonseed | 4,935 | 31.5 | 3,244 | 30.6 | 4,272 | 32.3 | 1,959 | 33.1 | 61,849 | 32.9 | 52,989 | 33.0 | 8,860 | 32.4 | 108 | 23.6 |
| 118 | Ice cream | 6,400 | 26.6 | 9,005 | 28.4 | 4,696 | 27.1 | 5,624 | 29.4 | 68,587 | 32.7 | 30,319 | 30.0 | 38,268 | 35.3 | 165 | 6.7 |

[1] For footnotes, see end of table.

*tries, 1935, based on value of products* Continued

sands of dollars]

| Large eight producers | | | | | | | | | | | | | | Industry | Industry number |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Persons employed | | Wages and salaries | | Wage earners | | Wages | | Value of product | | Cost of materials, etc.[1] | | Value added by manufacturer[2] | | Number of establishments | | | |
| Number | Percent of industry | Amount | Percent of industry | Number | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Number | Percent of industry | | |
| 210 SMALL INDUSTRIES—Continued | | | | | | | | | | | | | | | | | |
| 206 | 56.3 | 446 | 62.6 | 189 | 54.0 | 191 | 56.7 | 1,634 | 67.2 | 876 | 71.7 | 758 | 62.7 | 8 | 17.0 | Artists' materials | 1603 |
| 334 | 57.8 | 549 | 59.7 | 241 | 61.0 | 262 | 65.5 | 4,675 | 71.7 | 2,377 | 69.0 | 2,298 | 74.8 | 11 | 23.9 | Foundry supplies | 1614 |
| 2,739 | 61.1 | 3,568 | 60.8 | 2,185 | 62.1 | 2,286 | 63.0 | 15,519 | 67.6 | 5,838 | 64.0 | 9,681 | 69.9 | 11 | 12.6 | Dentists' equipment and supplies | 1611 |
| 6,250 | 61.9 | 6,832 | 60.3 | 5,574 | 68.1 | 5,759 | 68.9 | 109,203 | 71.4 | 53,329 | 69.7 | 55,874 | 73.1 | 19 | 11.5 | Liquors, distilled | 133 |
| 1,107 | 63.4 | 1,660 | 61.7 | 956 | 63.9 | 1,257 | 65.8 | 3,734 | 67.3 | 952 | 65.3 | 2,762 | 68.0 | 17 | 35.4 | Lasts and related products | 310 |
| 3,364 | 73.2 | 3,644 | 74.2 | 3,009 | 73.2 | 3,076 | 75.2 | 9,617 | 75.8 | 3,988 | 71.2 | 5,629 | 79.1 | 8 | 22.2 | Musical instruments: pianos | 1630 |
| 4,629 | 47.1 | 3,785 | 45.6 | 4,374 | 48.7 | 3,279 | 49.4 | 48,373 | 60.2 | 38,376 | 64.2 | 9,997 | 48.5 | 65 | 35.1 | Wood preserving | 319 |
| 1,847 | 55.2 | 3,153 | 51.5 | 1,380 | 58.2 | 1,896 | 58.6 | 21,034 | 60.9 | 12,356 | 66.5 | 8,678 | 54.4 | 49 | 25.7 | Ink, printing | 618 |
| 1,502 | 56.5 | 2,136 | 59.8 | 1,367 | 61.3 | 1,738 | 69.1 | 11,358 | 63.5 | 6,545 | 65.6 | 4,813 | 60.9 | 36 | 27.3 | Paving materials, blocks (except brick and stone) and mixtures | 1632 |
| 11,209 | 60.8 | 15,644 | 60.8 | 10,094 | 60.5 | 12,973 | 60.1 | 162,543 | 68.1 | 124,548 | 69.0 | 37,995 | 65.3 | 34 | 38.6 | Coke-oven products | 701 |
| 364 | 58.9 | 480 | 61.9 | 280 | 59.6 | 242 | 55.3 | 1,768 | 64.6 | 602 | 57.9 | 1,166 | 68.7 | 8 | 18.6 | Hair work | 1617 |
| 1,591 | 63.5 | 1,995 | 65.4 | 1,411 | 64.8 | 1,576 | 67.9 | 6,266 | 64.9 | 2,735 | 63.2 | 3,531 | 66.3 | 10 | 23.3 | Nails, spikes, etc | 1113 |
| 903 | 19.8 | 1,353 | 20.2 | 623 | 21.5 | 538 | 20.3 | 36,629 | 54.0 | 12,610 | 43.2 | 24,019 | 62.1 | 16 | 3.9 | Flavoring extracts, flavoring sirups, and related products | 115 |
| 6,808 | 57.7 | 8,995 | 61.1 | 6,232 | 58.1 | 7,459 | 62.3 | 47,853 | 64.8 | 26,860 | 64.0 | 20,993 | 65.9 | 13 | 27.1 | Wrought pipe, welded and heavy riveted | 1128 |
| 3,428 | 62.8 | 3,581 | 66.2 | 3,179 | 64.6 | 3,041 | 64.7 | 9,979 | 64.3 | 4,742 | 63.9 | 5,237 | 64.7 | 10 | 18.2 | Carriages and sleds, children's | 1403 |
| 3,782 | 65.7 | 4,221 | 59.8 | 3,309 | 69.3 | 3,219 | 67.9 | 15,159 | 62.5 | 7,886 | 67.1 | 7,273 | 58.2 | 14 | 11.3 | Steam and other packing, pipe and boiler covering, and gaskets, n. e. c. | 1644 |
| 1,121 | 60.3 | 1,116 | 63.2 | 930 | 60.3 | 808 | 62.9 | 4,621 | 67.5 | 2,485 | 67.5 | 2,136 | 67.6 | 8 | 17.8 | Carriages, wagons, sleighs, and sleds | 1404 |
| 3,982 | 65.3 | 4,469 | 70.6 | 3,338 | 64.4 | 2,972 | 70.2 | 13,355 | 66.8 | 5,374 | 65.1 | 7,981 | 68.0 | 9 | 19.1 | Pencils, lead (including mechanical), and crayons | 1633 |
| 1,042 | 60.7 | 2,188 | 61.1 | 878 | 61.0 | 1,412 | 60.1 | 49,208 | 65.5 | 37,713 | 66.9 | 11,495 | 61.5 | 18 | 33.3 | Malt | 122 |
| 5,942 | 59.8 | 6,024 | 55.2 | 5,222 | 61.7 | 4,821 | 58.0 | 107,514 | 62.7 | 83,466 | 63.7 | 24,048 | 59.3 | 212 | 45.1 | Condensed and evaporated milk | 111 |
| 4,078 | 55.6 | 2,650 | 51.6 | 4,567 | 56.7 | 2,466 | 54.9 | 10,615 | 56.0 | 5,796 | 56.3 | 4,819 | 55.7 | 27 | 24.5 | Gloves and mittens, cloth or cloth and leather combined | 2171 |
| 4,993 | 67.8 | 5,787 | 66.6 | 4,544 | 70.1 | 4,768 | 71.3 | 51,929 | 68.2 | 29,992 | 69.8 | 21,937 | 66.1 | 20 | 26.8 | Roofing, built-up and roll; asphalt shingles; roof coatings | 1638 |
| 1,122 | 49.5 | 1,476 | 49.5 | 940 | 53.1 | 1,053 | 58.0 | 26,453 | 63.4 | 18,568 | 64.1 | 7,885 | 61.7 | 17 | 16.0 | Oils not elsewhere classified | 625 |
| 2,540 | 56.1 | 3,127 | 51.7 | 2,118 | 58.7 | 2,074 | 60.5 | 38,081 | 60.8 | 31,655 | 60.9 | 6,426 | 60.5 | 20 | 20.2 | Smelting and refining, nonferrous metals, n. e. c. | 1217 |
| 7,904 | 54.8 | 7,041 | 55.5 | 7,420 | 54.8 | 5,738 | 55.3 | 23,859 | 63.0 | 9,291 | 62.8 | 14,568 | 63.1 | 21 | 29.6 | Cast-iron pipe and fittings | 1102 |
| 3,591 | 50.2 | 2,983 | 44.3 | 3,385 | 57.6 | 2,643 | 57.7 | 55,945 | 56.4 | 26,243 | 51.6 | 29,702 | 62.9 | 13 | 5.0 | Liquors, rectified or blended | 136 |
| 1,880 | 55.8 | 1,414 | 55.6 | 1,806 | 56.9 | 1,134 | 56.7 | 3,626 | 58.9 | 1,311 | 58.9 | 2,315 | 58.8 | 15 | 20.8 | Boxes, cigar, wooden and part wooden | 303 |
| 1,810 | 51.4 | 2,418 | 57.2 | 1,424 | 49.7 | 1,695 | 56.3 | 4,945 | 54.6 | 1,312 | 48.1 | 3,633 | 57.4 | 8 | 8.6 | Musical instruments and parts and materials, n. e. c. | 1628 |
| 1,005 | 73.0 | 1,007 | 69.1 | 925 | 76.0 | 747 | 72.6 | 2,157 | 67.7 | 811 | 66.3 | 1,346 | 68.6 | 8 | 23.6 | Musical-instrument parts and materials: piano and organ | 1627 |
| 3,043 | 62.3 | 3,197 | 58.5 | 2,690 | 63.1 | 2,754 | 61.4 | 11,574 | 58.9 | 5,986 | 60.5 | 5,588 | 57.2 | 12 | 30.0 | Wall paper | 411 |
| 1,284 | 41.4 | 1,782 | 36.1 | 1,136 | 42.7 | 1,312 | 48.1 | 10,354 | 60.3 | 7,390 | 67.5 | 2,964 | 47.7 | 8 | 11.0 | Jewelers' findings and materials | 1224 |
| 661 | 52.2 | 853 | 36.7 | 568 | 54.8 | 589 | 58.8 | 4,838 | 56.8 | 2,830 | 59.5 | 2,008 | 53.1 | 33 | 26.4 | Vinegar and cider | 132 |
| 11,904 | 49.2 | 15,527 | 50.5 | 10,985 | 51.0 | 13,201 | 54.0 | 68,849 | 54.0 | 37,178 | 54.3 | 31,671 | 53.8 | 20 | 22.7 | Wire drawn from purchased rods | 1126 |
| 1,300 | 45.8 | 1,534 | 38.2 | 1,216 | 51.5 | 1,176 | 46.7 | 11,183 | 53.4 | 6,135 | 53.1 | 5,348 | 53.6 | 10 | 5.3 | Belting and packing, leather | 901 |
| 1,375 | 51.7 | 1,456 | 47.7 | 1,183 | 51.3 | 968 | 49.2 | 7,418 | 59.2 | 2,823 | 56.3 | 4,595 | 61.2 | 8 | 9.8 | Beauty-shop equipment, except furniture | 1653 |
| 872 | 40.0 | 1,178 | 36.1 | 691 | 46.1 | 632 | 43.1 | 9,015 | 50.3 | 4,173 | 49.8 | 4,842 | 50.7 | 9 | 5.1 | Blacking, stains, and dressings | 604 |
| 1,325 | 50.8 | 1,330 | 49.9 | 1,038 | 51.3 | 678 | 51.7 | 23,278 | 52.8 | 17,719 | 51.8 | 5,559 | 56.2 | 21 | 30.9 | Rice cleaning and polishing | 127 |
| 4,052 | 56.2 | 6,109 | 59.5 | 4,350 | 55.4 | 4,912 | 56.6 | 16,368 | 59.5 | 5,232 | 54.1 | 11,136 | 62.4 | 9 | 16.1 | Lace goods | 208 |
| 13,819 | 68.1 | 14,794 | 65.5 | 12,904 | 69.1 | 12,291 | 67.2 | 36,141 | 59.1 | 13,679 | 60.7 | 22,462 | 58.1 | 12 | 15.8 | Clocks, watches, etc., materials and parts except watchcases | 1202 |
| 85 | 41.9 | 146 | 49.5 | 70 | 45.8 | 107 | 53.2 | 1,115 | 54.4 | 790 | 63.8 | 325 | 40.1 | 8 | 13.3 | Lapidary work | 1623 |
| 2,198 | 56.2 | 2,823 | 54.3 | 1,934 | 59.5 | 2,176 | 59.9 | 16,148 | 58.1 | 8,564 | 56.8 | 7,884 | 60.3 | 20 | 27.0 | Glue and gelatin | 616 |
| 6,698 | 32.0 | 6,398 | 30.5 | 5,971 | 33.5 | 4,614 | 32.2 | 70,351 | 47.7 | 50,886 | 53.3 | 13,468 | 33.0 | 41 | 5.6 | Fabricated textile products, n. e. c. | 219 |
| 880 | 59.8 | 1,026 | 54.4 | 758 | 63.1 | 689 | 54.3 | 2,920 | 56.2 | 1,178 | 58.8 | 1,742 | 54.6 | 8 | 12.4 | Galvanizing and other coating | 1108 |
| 4,107 | 63.4 | 4,688 | 61.5 | 3,686 | 64.0 | 3,714 | 63.6 | 19,724 | 56.9 | 11,636 | 55.3 | 8,088 | 59.4 | 18 | 28.1 | Steel barrels, kegs, and drums | 1120 |
| 4,475 | 28.9 | 5,103 | 28.6 | 4,022 | 29.3 | 3,802 | 28.1 | 23,121 | 45.2 | 4,394 | 34.9 | 18,727 | 18.5 | 10 | 3.8 | Cutlery (not including silver and plated cutlery) and edge tools | 1103 |
| 5,085 | 45.0 | 5,404 | 44.9 | 4,402 | 45.5 | 4,211 | 46.7 | 16,439 | 47.2 | 7,921 | 47.8 | 8,518 | 46.6 | 15 | 7.7 | Sporting and athletic goods, not including firearms or ammunition | 1642 |
| 2,128 | 35.7 | 5,708 | 40.9 | 1,482 | 33.6 | 2,967 | 35.1 | 12,371 | 46.0 | 1,559 | 11.9 | 10,812 | 46.7 | 16 | 7.8 | Stereotyping and electrotyping, not done in printing establishments | 512 |
| 1,121 | 57.5 | 1,751 | 58.1 | 818 | 57.4 | 929 | 57.0 | 8,203 | 56.4 | 4,146 | 55.3 | 4,147 | 57.6 | 8 | 14.3 | Carbon paper and inked ribbons | 1607 |
| 200 | 43.9 | 348 | 47.0 | 121 | 45.3 | 130 | 48.4 | 1,976 | 54.4 | 885 | 53.8 | 1,091 | 54.9 | 8 | 12.2 | Mucilage, paste, and other adhesives, except glue and rubber cement | 621 |
| 242 | 35.9 | 258 | 42.2 | 209 | 36.5 | 167 | 39.5 | 776 | 47.2 | 359 | 58.8 | 417 | 40.3 | 8 | 11.0 | Feathers, plumes, and manufactures thereof | 1613 |
| 3,360 | 31.1 | 3,703 | 26.8 | 3,046 | 33.2 | 2,957 | 29.3 | 50,221 | 38.6 | 42,776 | 41.1 | 7,445 | 27.9 | 135 | 16.7 | Sausage, meat puddings, headcheese, etc | 128 |
| 1,481 | 57.8 | 1,593 | 50.6 | 1,340 | 58.3 | 1,163 | 58.8 | 3,533 | 55.5 | 1,267 | 53.9 | 2,266 | 56.5 | 8 | 11.1 | Jewelry and instrument cases | 1622 |
| 4,402 | 43.8 | 4,161 | 39.7 | 4,129 | 45.3 | 3,516 | 43.7 | 31,941 | 48.7 | 20,386 | 48.9 | 11,558 | 48.5 | 24 | 22.4 | Bags, paper, exclusive of those made in paper mills | 401 |
| 320 | 35.7 | 469 | 42.9 | 255 | 35.5 | 320 | 39.9 | 1,333 | 46.1 | 250 | 37.5 | 1,083 | 48.7 | 8 | 7.6 | Statuary and art goods (except concrete), factory product | 1019 |
| 9,871 | 43.0 | 11,217 | 41.8 | 8,891 | 44.2 | 9,600 | 45.0 | 34,144 | 45.1 | 13,362 | 42.0 | 20,782 | 47.5 | 16 | 6.3 | Plumbers' supplies, not including pipe or vitreous-china sanitary ware | 111 |
| 1,604 | 43.4 | 1,788 | 43.6 | 1,396 | 46.5 | 1,247 | 46.0 | 9,782 | 48.1 | 6,488 | 53.1 | 3,294 | 40.6 | 25 | 7.8 | Window shades (textile and paper) and fixtures | 1651 |
| 1,549 | 43.5 | 2,314 | 40.9 | 1,211 | 45.7 | 1,172 | 44.5 | 15,956 | 47.4 | 9,793 | 49.7 | 6,163 | 44.2 | 26 | 16.9 | Tanning materials, natural dyestuffs, mordants, etc | 632 |
| 2,175 | 32.7 | 3,657 | 39.0 | 1,829 | 34.5 | 2,730 | 42.0 | 8,048 | 40.0 | 1,437 | 31.3 | 6,611 | 42.6 | 10 | 2.6 | Engraving, steel, copperplate, and wood and plate printing | 504 |
| 4,783 | 27.6 | 4,750 | 24.6 | 4,249 | 30.1 | 3,646 | 30.1 | 97,543 | 43.8 | 80,391 | 50.7 | 17,152 | 26.7 | 186 | 18.1 | Food preparations not elsewhere classified | 117 |
| 7,779 | 53.4 | 9,836 | 54.1 | 6,870 | 54.9 | 7,001 | 56.8 | 27,718 | 48.3 | 14,360 | 49.5 | 13,358 | 47.1 | 19 | 13.9 | Bolts, nuts, washers, and rivets | 1101 |
| 4,604 | 44.0 | 5,551 | 41.7 | 4,045 | 44.8 | 4,038 | 44.4 | 18,626 | 42.7 | 9,728 | 46.9 | 8,898 | 38.9 | 25 | 15.1 | Envelopes | 405 |
| 1,400 | 37.7 | 946 | 41.9 | 1,094 | 37.2 | 685 | 44.8 | 12,385 | 47.1 | 8,537 | 46.7 | 3,848 | 48.2 | 16 | 21.6 | Sugar, cane, not including products of refineries | 130 |
| 2,777 | 46.4 | 3,532 | 45.5 | 2,132 | 47.0 | 2,308 | 45.3 | 11,148 | 49.0 | 4,769 | 47.9 | 6,379 | 49.9 | 12 | 9.0 | Doors, shutters, and window sash and frames, molding, and trim, metal | 1104 |
| 3,047 | 37.2 | 3,533 | 38.4 | 2,492 | 36.6 | 2,208 | 36.8 | 20,347 | 48.3 | 7,077 | 38.1 | 13,270 | 52.0 | 11 | 4.4 | Brushes, other than rubber | 1605 |
| 6,522 | 41.6 | 4,280 | 40.3 | 5,621 | 42.5 | 2,543 | 43.0 | 81,750 | 43.5 | 69,307 | 43.5 | 11,843 | 43.3 | 113 | 31.2 | Oil, cake, and meal, cottonseed | 622 |
| 7,113 | 29.6 | 9,957 | 31.4 | 5,362 | 30.4 | 6,252 | 32.7 | 79,071 | 37.7 | 35,045 | 34.6 | 44,026 | 40.6 | 181 | 7.4 | Ice cream | 118 |

TABLE II.—*Concentration in manufacturing indus*

[Values in thou

| Industry number | Industry | Largest four producers | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Persons employed | | Wages and salaries | | Wage earners | | Wages | | Value of product | | Cost of materials, etc.[1] | | Value added by manufacture[2] | | Number of establishments | |
| | | Number | Percent of industry | Amount | Percent of industry | Number | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Number | Percent of industry | Number | Percent of industry |
| | 210 SMALL INDUSTRIES—Continued | | | | | | | | | | | | | | | | |
| 1325 | Printers' machinery and equipment | 3,846 | 29 7 | 6,016 | 29 3 | 3,027 | 30 6 | 1,372 | 32 2 | 16,752 | 32 5 | 2,814 | 21 6 | 13,938 | 36 2 | 6 | 2 5 |
| 1501 | Railroad repair shops, electric | 5,931 | 28 2 | 9,946 | 33 0 | 5,418 | 27 7 | 8,771 | 32 5 | 15,636 | 32 3 | 5,546 | 31 9 | 10,090 | 32 6 | 16 | 6 2 |
| 402 | Boot and shoe cut stock and findings | 4,323 | 21 3 | 4,787 | 22 5 | 4,045 | 22 1 | 4,263 | 25 4 | 35,940 | 32 2 | 27,407 | 36 0 | 8,533 | 24 0 | 23 | 4 6 |
| 2172 | Handkerchiefs | 1,558 | 29 6 | 1,207 | 29 4 | 1,486 | 30 4 | 998 | 31 1 | 5,872 | 31 8 | 3,697 | 38 9 | 2,175 | 24 3 | 5 | 5 6 |
| 202 | Cordage and twine; jute goods; linen goods | 5,978 | 29 3 | 5,020 | 27 5 | 5,349 | 28 7 | 3,755 | 26 9 | 21,521 | 31 3 | 9,945 | 28 8 | 11,576 | 33 7 | 13 | 8 8 |
| 1649 | Umbrellas, parasols, and canes | 914 | 37 6 | 833 | 36 7 | 854 | 39 0 | 638 | 37 3 | 3,116 | 30 9 | 1,641 | 26 7 | 1,475 | 37 4 | 4 | 4 8 |
| 126 | Poultry dressing and packing, wholesale | 3,099 | 32 7 | 2,056 | 28 8 | 2,710 | 33 5 | 1,516 | 29 9 | 28,313 | 30 5 | 24,051 | 31 4 | 4,262 | 26 1 | 135 | 24 0 |
| 1646 | Theatrical scenery and stage equipment | 82 | 20 8 | 212 | 30 5 | 60 | 21 5 | 136 | 31 1 | 580 | 29 9 | 245 | 32 7 | 335 | 28 2 | 4 | 8 3 |
| 1002 | Cement | 6,863 | 29 4 | 7,233 | 26 3 | 6,188 | 29 9 | 5,731 | 27 4 | 36,053 | 29 9 | 12,540 | 29 2 | 23,513 | 30 4 | 37 | 24 2 |
| 1313 | Textile machinery and parts | 7,871 | 34 7 | 10,544 | 35 5 | 6,632 | 34 8 | 7,857 | 37 0 | 20,224 | 29 4 | 7,129 | 30 9 | 13,095 | 28 6 | 5 | 1 1 |
| 1324 | Cranes and dredging, excavating, and road-building machinery | 4,219 | 29 4 | 6,038 | 31 1 | 3,354 | 31 0 | 4,106 | 32 7 | 18,420 | 29 3 | 7,820 | 27 2 | 10,600 | 31 1 | 8 | 6 3 |
| 617 | Grease and tallow, not including lubricating greases | 1,772 | 31 0 | 2,249 | 29 2 | 1,416 | 29 8 | 1,582 | 29 4 | 11,424 | 28 7 | 5,827 | 26 3 | 5,597 | 31 7 | 18 | 6 9 |
| 1620 | Instruments and apparatus, professional, scientific, commercial, and industrial | 5,558 | 27 8 | 7,784 | 27 9 | 4,404 | 29 0 | 5,196 | 29 6 | 19,251 | 28 2 | 5,931 | 28 9 | 13,320 | 27 9 | 10 | 3 6 |
| 609 | Cleaning and polishing preparations | 852 | 19 2 | 1,393 | 20 5 | 566 | 20 0 | 770 | 25 4 | 11,868 | 28 0 | 4,750 | 27 5 | 7,118 | 28 3 | 4 | 1 0 |
| 315 | Synthetic-resin, cellulose-plastic, etc., n. e. c. | 3,371 | 23 5 | 3,730 | 24 2 | 3,035 | 23 8 | 3,115 | 25 8 | 13,865 | 27 6 | 6,370 | 30 0 | 7,495 | 25 8 | 14 | 9 2 |
| 1616 | Furs, dressed and dyed | 2,386 | 34 0 | 3,046 | 31 7 | 2,301 | 35 8 | 2,591 | 34 3 | 5,818 | 27 3 | 1,848 | 28 4 | 3,970 | 26 8 | 12 | 7 2 |
| 318 | Window and door screens and weather strip | 590 | 25 3 | 605 | 22 6 | 528 | 28 2 | 399 | 22 9 | 2,334 | 26 9 | 1,153 | 28 1 | 1,181 | 25 9 | 6 | 4 3 |
| 104 | Canned and cured fish, crabs, shrimps, oysters, and clams | 2,775 | 19 4 | 1,728 | 20 9 | 2,618 | 19 6 | 1,306 | 20 7 | 16,310 | 26 9 | 9,390 | 24 0 | 6,920 | 32 2 | 8 | 2 9 |
| 135 | Liquors, vinous | 617 | 19 8 | 632 | 17 5 | 518 | 22 2 | 384 | 18 2 | 9,777 | 26 8 | 3,704 | 24 2 | 6,073 | 28 7 | 7 | 2 2 |
| 704 | Lubricating greases, not made in petroleum refineries | 667 | 20 7 | 927 | 18 7 | 410 | 21 2 | 457 | 20 0 | 9,379 | 26 0 | 5,643 | 27 2 | 3,736 | 24 4 | 7 | 3 9 |
| 909 | Saddlery, harness, and whips | 866 | 22 9 | 943 | 24 3 | 795 | 24 6 | 759 | 26 0 | 3,465 | 26 0 | 2,171 | 28 1 | 1,294 | 23 0 | 4 | 2 5 |
| 614 | Fertilizers | 6,482 | 31 3 | 5,273 | 31 0 | 5,734 | 32 9 | 3,882 | 35 4 | 36,356 | 25 9 | 24,018 | 25 7 | 12,338 | 26 2 | 105 | 15 7 |
| 306 | Cooperage | 2,133 | 20 0 | 2,008 | 20 4 | 2,025 | 20 5 | 1,770 | 22 2 | 12,066 | 25 9 | 8,164 | 27 3 | 3,902 | 23 5 | 77 | 18 9 |
| 1624 | Mattresses and bed springs, n. e. c. | 4,464 | 24 9 | 5,145 | 26 0 | 3,925 | 25 4 | 4,044 | 27 5 | 21,879 | 25 8 | 12,327 | 25 2 | 9,552 | 26 6 | 13 | 1 5 |
| 628 | Perfumes, cosmetics, and other toilet preparations | 2,115 | 16 1 | 2,356 | 14 6 | 1,614 | 16 7 | 1,518 | 17 7 | 30,271 | 25 3 | 10,958 | 24 6 | 19,313 | 25 8 | 6 | 1 1 |
| 1207 | Lighting equipment | 3,402 | 17 4 | 4,663 | 19 2 | 3,176 | 19 0 | 3,996 | 23 2 | 20,805 | 24 4 | 10,924 | 27 4 | 9,971 | 21 8 | 4 | 8 |
| 1125 | Tools, not including edge tools, machine tools, files, or saws | 3,383 | 22 5 | 3,913 | 21 3 | 2,881 | 22 8 | 2,971 | 22 3 | 12,574 | 23 9 | 4,628 | 24 8 | 7,946 | 23 5 | 13 | 3 8 |
| 206 | Hats, felt and straw, except millinery | 7,161 | 28 7 | 8,717 | 30 3 | 6,668 | 28 9 | 7,613 | 31 5 | 22,050 | 23 7 | 8,992 | 18 5 | 13,058 | 29 4 | 5 | 1 7 |
| 320 | Wood turned and shaped and other wooden goods, n. e. c. | 5,185 | 21 8 | 4,186 | 20 4 | 4,867 | 22 6 | 3,714 | 23 1 | 14,109 | 23 6 | 6,940 | 26 6 | 7,169 | 21 3 | 13 | 1 7 |
| 114 | Feeds, prepared, for animals and fowls | 1,900 | 12 3 | 2,516 | 13 7 | 1,492 | 12 9 | 1,611 | 14 6 | 66,391 | 23 0 | 53,548 | 23 2 | 12,843 | 22 2 | 39 | 4 2 |
| 1013 | Lime | 1,332 | 16 0 | 1,425 | 18 8 | 1,227 | 16 4 | 1,207 | 20 0 | 5,311 | 22 7 | 1,900 | 21 3 | 3,411 | 23 7 | 17 | 9 0 |
| 1309 | Pumps (hand and power) and pumping equipment | 4,116 | 20 6 | 6,308 | 23 4 | 3,065 | 20 5 | 4,155 | 24 0 | 19,714 | 22 7 | 7,224 | 20 5 | 12,490 | 24 1 | 5 | 1 6 |
| 1117 | Screw-machine products and wood screws | 3,754 | 21 7 | 4,789 | 21 7 | 3,262 | 21 7 | 3,881 | 23 1 | 13,958 | 22 2 | 7,010 | 26 4 | 6,948 | 19 0 | 6 | 2 0 |
| 1321 | Boiler shops | 2,986 | 17 8 | 4,258 | 19 4 | 2,205 | 16 6 | 2,773 | 18 8 | 16,174 | 22 1 | 7,547 | 21 0 | 8,627 | 23 2 | 7 | 1 7 |
| 1601 | Artificial and preserved flowers and plants | 906 | 25 2 | 883 | 26 6 | 865 | 26 9 | 794 | 30 4 | 1,953 | 21 7 | 644 | 19 5 | 1,309 | 23 0 | 5 | 2 6 |
| 1302 | Cash registers, adding and calculating machines, and other business machines | 5,742 | 24 6 | 8,308 | 24 6 | 4,368 | 23 6 | 5,693 | 24 0 | 26,200 | 21 3 | 4,566 | 33 1 | 15,634 | 19 3 | 7 | 7 5 |
| 1167 | Forgings, iron and steel | 2,389 | 17 2 | 10,464 | 54 2 | 2,107 | 17 2 | 9,746 | 64 5 | 13,932 | 21 0 | 7,515 | 21 6 | 6,417 | 20 3 | 13 | 7 0 |
| 906 | Leather goods not elsewhere classified | 1,175 | 16 6 | 1,175 | 15 7 | 1,002 | 16 7 | 876 | 16 1 | 5,046 | 19 1 | 2,301 | 17 3 | 2,745 | 21 0 | 4 | 1 0 |
| 1015 | Minerals and earths, ground or otherwise treated | 719 | 14 5 | 853 | 16 1 | 595 | 14 0 | 582 | 16 1 | 4,067 | 18 8 | 2,009 | 23 1 | 2,058 | 16 0 | 12 | 7 5 |
| 107 | Cheese | 1,160 | 23 0 | 1,245 | 25 5 | 964 | 22 2 | 938 | 23 8 | 18,360 | 18 6 | 14,759 | 17 6 | 3,601 | 24 3 | 158 | 6 1 |
| 1618 | Hand stamps and stencils and brands | 566 | 18 2 | 683 | 16 5 | 439 | 19 4 | 450 | 17 7 | 1,685 | 18 1 | 587 | 22 1 | 1,098 | 16 5 | 8 | 2 9 |
| 1204 | Sheet-metal work, not specifically classified | 2,368 | 10 8 | 2,993 | 10 4 | 1,909 | 11 0 | 2,175 | 11 1 | 19,531 | 17 8 | 12,231 | 21 2 | 7,360 | 14 2 | 16 | 1 1 |
| 305 | Caskets, coffins, burial cases, and other morticians' goods | 3,094 | 19 2 | 3,758 | 19 2 | 2,849 | 20 7 | 3,127 | 22 6 | 11,551 | 17 6 | 5,060 | 17 2 | 6,491 | 17 9 | 25 | 4 6 |
| 910 | Trunks, suitcases, and bags | 1,345 | 17 6 | 1,281 | 15 5 | 1,250 | 18 8 | 1,051 | 16 6 | 4,842 | 17 2 | 2,592 | 17 4 | 2,250 | 16 9 | 5 | 1 6 |
| 103 | Butter | 4,629 | 18 6 | 4,583 | 17 2 | 3,581 | 19 4 | 2,978 | 17 0 | 86,266 | 17 2 | 71,712 | 17 0 | 14,554 | 18 6 | 160 | 4 6 |
| 313 | Mirror and picture frames | 483 | 15 1 | 578 | 16 3 | 402 | 15 0 | 439 | 17 2 | 1,679 | 17 0 | 746 | 17 9 | 933 | 16 4 | 4 | 2 3 |
| 627 | Insecticides and fungicides, etc., n. e. c. | 491 | 9 0 | 633 | 7 9 | 369 | 10 6 | 361 | 10 6 | 8,847 | 16 6 | 3,834 | 15 8 | 5,013 | 17 3 | 4 | 6 |
| 1648 | Toys, n. e. c., games and playground equipment | 2,894 | 16 7 | 2,758 | 17 0 | 2,671 | 17 4 | 2,317 | 19 1 | 8,688 | 16 6 | 3,578 | 15 2 | 5,110 | 18 0 | 7 | 1 9 |
| 1604 | Brooms | 812 | 17 8 | 661 | 17 6 | 769 | 18 5 | 537 | 17 5 | 2,329 | 16 2 | 1,048 | 14 0 | 1,281 | 18 7 | 4 | 1 1 |
| 121 | Macaroni, spaghetti, vermicelli, and noodles | 949 | 13 6 | 1,079 | 14 8 | 857 | 14 3 | 846 | 15 9 | 7,664 | 16 1 | 4,588 | 14 4 | 3,076 | 19 5 | 5 | 1 5 |
| 1606 | Buttons | 1,664 | 14 6 | 1,706 | 16 2 | 1,527 | 14 8 | 1,436 | 17 6 | 4,313 | 15 4 | 1,621 | 14 6 | 2,692 | 15 9 | 6 | 2 0 |
| 301 | Baskets and rattan and willow ware, not including furniture | 1,571 | 16 4 | 854 | 15 0 | 1,511 | 16 8 | 732 | 15 9 | 2,192 | 15 1 | 926 | 16 1 | 1,266 | 14 5 | 9 | 4 4 |
| 211 | Waste and related products | 1,197 | 11 3 | 1,188 | 10 9 | 1,105 | 12 0 | 854 | 11 6 | 9,815 | 14 9 | 6,358 | 15 1 | 3,457 | 14 6 | 12 | 3 8 |
| 905 | Gloves and mittens, leather | 1,457 | 13 7 | 1,427 | 14 3 | 1,389 | 14 2 | 1,275 | 15 0 | 4,056 | 14 4 | 1,788 | 13 3 | 2,268 | 15 4 | 4 | 1 8 |
| 506 | Lithographing | 3,330 | 15 3 | 4,966 | 14 1 | 2,800 | 15 8 | 3,723 | 15 4 | 13,097 | 14 2 | 4,593 | 15 3 | 8,504 | 13 7 | 10 | 2 6 |
| 501 | Bookbinding and blank-book making | 2,518 | 10 4 | 3,198 | 10 6 | 2,014 | 9 9 | 2,231 | 10 2 | 10,019 | 13 7 | 3,204 | 15 2 | 6,815 | 13 1 | 8 | 8 |
| 507 | Photoengraving, not done in printing establishments | 1,283 | 9 9 | 3,420 | 11 3 | 1,073 | 11 4 | 2,812 | 13 2 | 7,078 | 13 3 | 1,602 | 20 4 | 5,476 | 12 0 | 8 | 1 2 |
| 1205 | Electroplating | 689 | 9 5 | 810 | 9 0 | 612 | 9 8 | 627 | 9 0 | 2,268 | 12 4 | 805 | 17 5 | 1,463 | 10 7 | 7 | 1 3 |
| 1625 | Models and patterns, not including paper patterns | 485 | 9 8 | 966 | 11 9 | 382 | 9 3 | 619 | 10 1 | 1,797 | 11 7 | 623 | 19 5 | 1,174 | 9 7 | 6 | 1 0 |
| 1612 | Miscellaneous articles, n. e. c. | 1,602 | 9 7 | 1,897 | 11 6 | 1,376 | 9 7 | 1,357 | 11 5 | 5,754 | 11 6 | 2,103 | 10 2 | 3,651 | 12 6 | 4 | 6 |
| 1005 | Concrete products | 560 | 5 2 | 729 | 6 0 | 449 | 5 4 | 509 | 6 5 | 4,583 | 10 2 | 2,337 | 11 7 | 2,246 | 9 0 | 29 | 2 4 |
| 221 | Embroideries; trimmings (not made in textile mills); etc. | 441 | 3 2 | 672 | 4 6 | 373 | 3 1 | 365 | 3 4 | 4,546 | 9 8 | 3,045 | 15 5 | 1,501 | 5 6 | 6 | 5 |
| 1210 | Jewelry | 2,521 | 12 2 | 2,671 | 10 8 | 2,331 | 13 6 | 2,295 | 12 9 | 6,730 | 9 5 | 2,675 | 8 8 | 4,055 | 10 0 | 4 | 4 |
| 1014 | Marble, granite, slate, and other stone, cut and shaped | 1,729 | 9 4 | 1,554 | 7 0 | 1,549 | 10 2 | 1,261 | 7 8 | 5,332 | 9 5 | 2,242 | 12 3 | 3,090 | 8 0 | 17 | 1 2 |
| 1640 | Signs and advertising novelties | 1,658 | 9 4 | 1,981 | 8 7 | 1,437 | 10 5 | 1,508 | 10 1 | 5,644 | 9 2 | 2,141 | 10 1 | 3,503 | 8 7 | 11 | 3 8 |
| 101 | Beverages, nonalcoholic | 957 | 4 3 | 1,338 | 4 5 | 801 | 4 8 | 876 | 5 1 | 13,929 | 8 7 | 4,268 | 6 8 | 9,661 | 10 0 | 62 | 1 9 |

For footnotes, see end of table.

*tries, 1935, based on value of products*— Continued

- nits of dollars)

| Persons employed | | Wages and salaries | | Wage earners | | Wages | | Value of product | | Cost of materials, etc | | Value added by manufacture | | Number of establishments | | Industry | Industry number |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Number | Percent of industry | Amount | Percent of industry | Number | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Number | Percent of industry | | |
| | | | | | | | | | | | | | | | | 210 SMALL INDUSTRIES—Continued | |
| 6,224 | 48.1 | 9,920 | 48.4 | 4,774 | 48.1 | 6,929 | 51.0 | 24,156 | 47.4 | 5,100 | 39.1 | 19,576 | 50.3 | 30 | 4.2 | Printers' machinery and equipment | 1825 |
| 8,606 | 11.0 | 13,369 | 11.3 | 7,927 | 10.6 | 11,845 | 13.9 | 21,282 | 14.0 | 7,533 | 13.3 | 13,749 | 14.4 | 66 | 25.7 | Railroad repair shops, electric | 1501 |
| 5,821 | 28.7 | 6,225 | 29.3 | 5,434 | 29.7 | 5,480 | 32.7 | 16,846 | 32.0 | 35,911 | 47.2 | 10,935 | 30.8 | 32 | 6.3 | Boot and shoe cut stock and findings | 902 |
| 2,490 | 47.3 | 2,053 | 50.0 | 2,367 | 47.8 | 1,923 | 50.5 | 9,022 | 48.9 | 5,373 | 56.5 | 3,649 | 40.8 | 9 | 10.1 | Handkerchiefs | 2172 |
| 8,530 | 41.8 | 7,236 | 39.6 | 7,726 | 43.5 | 5,551 | 39.8 | 30,684 | 44.6 | 14,950 | 43.3 | 15,734 | 45.8 | 21 | 14.2 | Cordage and twine; jute goods; linen goods | 202 |
| 1,238 | 50.9 | 1,157 | 51.0 | 1,144 | 52.3 | 883 | 51.6 | 4,426 | 43.9 | 2,358 | 38.4 | 2,068 | 52.4 | 9 | 9.6 | Umbrellas, parasols, and canes | 1639 |
| 4,068 | 42.3 | 2,740 | 38.4 | 3,467 | 42.9 | 1,991 | 39.3 | 36,246 | 39.0 | 30,736 | 40.1 | 5,510 | 33.8 | 193 | 31.3 | Poultry dressing and packing, wholesale | 126 |
| 145 | 36.8 | 341 | 49.1 | 100 | 37.8 | 203 | 46.1 | 878 | 45.3 | 373 | 49.8 | 505 | 42.5 | 8 | 16.6 | Theatrical scenery and stage equipment | 1636 |
| 10,114 | 45.1 | 11,233 | 40.9 | 9,245 | 44.7 | 9,277 | 44.1 | 53,830 | 44.7 | 17,686 | 41.2 | 36,144 | 46.7 | 60 | 39.2 | Cement | 1002 |
| 11,380 | 50.2 | 14,515 | 48.8 | 9,611 | 50.4 | 10,885 | 51.0 | 31,597 | 45.9 | 10,330 | 44.7 | 21,267 | 46.5 | 14 | 4.0 | Textile machinery and parts | 1313 |
| 6,983 | 48.7 | 9,621 | 49.5 | 5,418 | 50.1 | 6,678 | 53.0 | 27,943 | 44.5 | 12,235 | 42.5 | 15,708 | 46.1 | 12 | 9.4 | Cranes and dredging, excavating and road building machinery | 1324 |
| 2,182 | 48.2 | 2,846 | 37.0 | 1,761 | 37.0 | 1,999 | 37.1 | 15,084 | 37.9 | 8,257 | 37.2 | 6,827 | 38.7 | 26 | 10.0 | Grease and tallow, not including lubricating greases | 617 |
| 8,376 | 41.7 | 11,414 | 40.9 | 6,566 | 42.8 | 7,534 | 42.9 | 29,383 | 43.0 | 9,156 | 41.6 | 20,227 | 42.3 | 16 | 5.7 | Instruments and apparatus, professional scientific, commercial, and industrial | 1620 |
| 1,187 | 26.8 | 1,650 | 28.7 | 744 | 26.3 | 945 | 31.2 | 16,936 | 39.9 | 6,205 | 35.9 | 10,731 | 42.7 | 8 | 2.0 | Cleaning and polishing preparations | 609 |
| 5,251 | 30.6 | 5,963 | 38.6 | 4,080 | 36.8 | 4,845 | 40.1 | 22,326 | 44.4 | 10,011 | 47.1 | 12,315 | 42.4 | 20 | 13.1 | Synthetic-resin, cellulose-plastic, etc., n. e. c | 315 |
| 2,591 | 36.9 | 3,478 | 36.0 | 2,469 | 38.4 | 2,841 | 37.6 | 8,560 | 40.1 | 2,996 | 46.0 | 5,564 | 37.5 | 16 | 9.6 | Furs, dressed and dyed | 1616 |
| 918 | 39.4 | 994 | 37.2 | 789 | 42.1 | 634 | 36.1 | 3,356 | 41.0 | 1,653 | 40.3 | 1,703 | 41.7 | 10 | 7.1 | Window and door screens and weather strip | 318 |
| 3,836 | 26.8 | 2,718 | 32.9 | 3,602 | 27.0 | 2,059 | 32.6 | 23,462 | 38.7 | 14,447 | 36.9 | 9,015 | 42.1 | 16 | 5.8 | Canned and cured fish, crabs, shrimps, oysters, and clams | 104 |
| 829 | 26.5 | 975 | 26.9 | 689 | 29.5 | 598 | 28.4 | 13,703 | 37.6 | 5,740 | 37.5 | 7,963 | 37.7 | 11 | 3.5 | Liquors, vinous | 135 |
| 1,072 | 33.3 | 1,469 | 29.6 | 725 | 37.5 | 834 | 36.5 | 14,472 | 10.1 | 9,166 | 44.1 | 5,306 | 34.6 | 13 | 7.2 | Lubricating greases, not made in petroleum refineries | 704 |
| 1,340 | 35.5 | 1,365 | 35.2 | 1,209 | 37.4 | 1,096 | 37.5 | 5,043 | 37.8 | 3,114 | 40.3 | 1,929 | 34.3 | 8 | 5.0 | Saddlery, harness, and whips | 909 |
| 9,326 | 45.1 | 7,293 | 42.8 | 8,292 | 47.5 | 5,363 | 48.9 | 58,356 | 41.6 | 30,760 | 42.6 | 18,596 | 39.5 | 168 | 27.1 | Fertilizers | 614 |
| 3,641 | 34.1 | 3,610 | 36.7 | 3,451 | 34.9 | 3,140 | 39.3 | 18,845 | 40.5 | 12,668 | 42.3 | 6,177 | 37.2 | 88 | 21.6 | Cooperage | 306 |
| 5,295 | 29.6 | 6,128 | 31.0 | 4,659 | 30.2 | 4,789 | 32.6 | 26,478 | 31.2 | 15,275 | 31.2 | 11,183 | 31.2 | 30 | 3.6 | Mattresses and bed springs, n. e. c | 1624 |
| 3,344 | 25.5 | 3,756 | 23.3 | 2,630 | 27.3 | 2,360 | 28.7 | 48,655 | 40.7 | 15,499 | 34.8 | 33,156 | 44.2 | 10 | 1.8 | Perfumes, cosmetics, and other toilet preparations | 628 |
| 5,290 | 26.3 | 7,025 | 28.9 | 4,652 | 27.9 | 5,570 | 32.3 | 29,831 | 34.8 | 13,750 | 34.5 | 16,081 | 35.1 | 8 | 1.6 | Lighting equipment | 1207 |
| 5,131 | 34.1 | 5,827 | 31.7 | 4,428 | 35.0 | 4,483 | 33.7 | 18,981 | 36.1 | 6,878 | 36.8 | 12,103 | 35.8 | 17 | 5.0 | Tools, not including edge tools, machine tools, files, or saws | 1125 |
| 9,315 | 37.3 | 11,463 | 40.0 | 8,647 | 37.5 | 10,007 | 41.4 | 31,462 | 33.8 | 13,912 | 28.6 | 17,550 | 39.5 | 11 | 3.7 | Hats, felt and straw, except millinery | 206 |
| 6,489 | 27.2 | 5,318 | 25.9 | 6,044 | 28.1 | 4,594 | 28.6 | 17,076 | 28.6 | 8,259 | 31.7 | 8,817 | 26.2 | 27 | 3.6 | Wood turned and shaped and other wooden goods, n. e. c | 320 |
| 3,371 | 21.8 | 4,186 | 22.8 | 2,562 | 22.1 | 2,689 | 24.3 | 99,058 | 34.3 | 79,153 | 34.4 | 19,605 | 33.8 | 62 | 6.6 | Feeds, prepared, for animals and fowls | 114 |
| 2,274 | 27.4 | 2,102 | 28.9 | 2,114 | 28.2 | 1,880 | 31.1 | 8,379 | 35.9 | 2,998 | 33.6 | 5,381 | 37.4 | 28 | 14.8 | Lime | 1013 |
| 6,185 | 31.0 | 9,019 | 33.4 | 4,628 | 30.9 | 5,970 | 34.3 | 30,643 | 35.2 | 11,038 | 31.3 | 19,605 | 37.9 | 9 | 2.8 | Pumps (hand and power) and pumping equipment | 1309 |
| 6,083 | 35.2 | 7,227 | 33.0 | 5,286 | 35.2 | 5,752 | 34.2 | 20,725 | 32.9 | 9,854 | 37.1 | 10,871 | 29.8 | 12 | 1.0 | Screw-machine products and wood screws | 1117 |
| 4,638 | 27.6 | 6,351 | 29.0 | 3,575 | 26.9 | 4,228 | 28.6 | 28,914 | 32.7 | 11,816 | 32.9 | 12,098 | 32.5 | 13 | 3.4 | Boiler shops | 1321 |
| 1,125 | 31.3 | 1,136 | 34.2 | 1,043 | 32.5 | 958 | 36.7 | 3,166 | 35.2 | 1,815 | 39.8 | 1,351 | 32.5 | 9 | 4.7 | Artificial and preserved flowers and plants | 1601 |
| 9,519 | 40.8 | 13,027 | 38.6 | 7,370 | 39.9 | 9,210 | 38.9 | 20,750 | 31.4 | 7,218 | 52.4 | 22,197 | 27.8 | 13 | 11.0 | Cash registers, adding and calculating machines and other business machines | 1302 |
| 4,088 | 29.5 | 12,775 | 66.2 | 3,641 | 29.7 | 11,608 | 76.8 | 21,531 | 32.5 | 11,251 | 32.4 | 10,280 | 32.5 | 19 | 10.3 | Forgings, iron and steel | 1107 |
| 1,566 | 22.1 | 1,695 | 22.7 | 1,341 | 22.3 | 1,260 | 23.2 | 6,997 | 26.5 | 3,238 | 24.4 | 3,759 | 28.7 | 8 | 2.0 | Leather goods not elsewhere classified | 906 |
| 1,257 | 25.4 | 1,404 | 26.5 | 1,080 | 25.4 | 996 | 27.6 | 6,944 | 32.2 | 3,292 | 37.9 | 3,652 | 28.4 | 19 | 11.8 | Minerals and earths, ground or otherwise treated | 1015 |
| 1,426 | 28.2 | 1,500 | 30.7 | 1,177 | 27.1 | 1,123 | 28.5 | 22,245 | 22.5 | 17,829 | 21.2 | 4,416 | 29.8 | 189 | 7.3 | Cheese | 107 |
| 929 | 29.8 | 1,132 | 27.3 | 747 | 33.1 | 783 | 30.9 | 2,696 | 28.9 | 882 | 33.2 | 1,814 | 27.2 | 15 | 5.4 | Hand stamps and stencils and brands | 1618 |
| 3,184 | 14.6 | 4,148 | 14.4 | 2,511 | 14.5 | 2,810 | 14.4 | 28,905 | 26.4 | 18,408 | 31.9 | 10,497 | 20.4 | 39 | 2.8 | Sheet metal work, not specifically classified | 1204 |
| 3,970 | 24.6 | 4,872 | 24.9 | 3,625 | 26.3 | 3,983 | 28.8 | 15,457 | 23.5 | 6,825 | 25.2 | 8,632 | 23.8 | 30 | 5.5 | Caskets, coffins, burial cases, and other morticians' goods | 305 |
| 2,066 | 27.0 | 2,109 | 25.5 | 1,807 | 28.6 | 1,692 | 26.7 | 7,451 | 26.4 | 3,824 | 25.6 | 3,627 | 27.2 | 10 | 3.2 | Trunks, suitcases, and bags | 910 |
| 6,833 | 27.4 | 7,039 | 26.4 | 5,154 | 27.9 | 4,477 | 25.6 | 128,750 | 25.7 | 107,407 | 25.4 | 21,343 | 27.3 | 243 | 7.0 | Butter | 103 |
| 877 | 27.4 | 1,021 | 28.8 | 756 | 28.2 | 756 | 29.6 | 3,076 | 31.2 | 1,452 | 34.8 | 1,624 | 28.6 | 8 | 4.7 | Mirror and picture frames | 313 |
| 851 | 15.6 | 1,139 | 11.3 | 649 | 18.7 | 693 | 20.4 | 14,462 | 27.1 | 6,325 | 26.0 | 8,137 | 28.0 | 14 | 2.6 | Insecticides and fungicides, etc., n. e. c | 627 |
| 4,432 | 25.5 | 4,444 | 27.3 | 4,016 | 26.1 | 3,515 | 29.0 | 13,366 | 25.6 | 5,854 | 24.8 | 7,512 | 26.4 | 11 | 2.9 | Toys, n. e. c., games, and playground equipment | 1648 |
| 1,108 | 24.3 | 933 | 24.9 | 1,046 | 25.2 | 773 | 25.2 | 3,207 | 23.0 | 1,486 | 19.9 | 1,811 | 26.4 | 8 | 2.3 | Brooms | 1604 |
| 1,672 | 24.0 | 1,834 | 25.2 | 1,522 | 25.3 | 1,439 | 27.1 | 12,574 | 26.1 | 8,093 | 25.4 | 4,481 | 28.4 | 9 | 2.7 | Macaroni, spaghetti, vermicelli, and noodles | 121 |
| 2,942 | 25.9 | 2,852 | 27.1 | 2,700 | 26.2 | 2,302 | 28.2 | 7,579 | 27.0 | 2,937 | 26.5 | 4,642 | 27.4 | 15 | 5.1 | Buttons | 1606 |
| 2,336 | 24.3 | 1,458 | 25.6 | 2,219 | 24.6 | 1,176 | 25.5 | 3,710 | 25.6 | 1,461 | 25.5 | 2,249 | 25.7 | 44 | 6.9 | Baskets and rattan and willow ware, not including furniture | 301 |
| 1,879 | 17.7 | 1,988 | 18.2 | 1,679 | 18.2 | 1,331 | 18.1 | 15,934 | 24.1 | 10,680 | 25.3 | 5,254 | 22.1 | 16 | 5.1 | Waste and related products | 211 |
| 2,563 | 24.2 | 2,500 | 25.0 | 2,428 | 24.8 | 2,215 | 26.1 | 6,527 | 23.2 | 3,009 | 22.4 | 3,518 | 23.9 | 8 | 3.6 | Gloves and mittens, leather | 905 |
| 5,228 | 24.0 | 7,936 | 22.5 | 4,266 | 24.1 | 5,720 | 23.7 | 20,615 | 22.1 | 7,042 | 23.5 | 13,573 | 21.9 | 14 | 3.6 | Lithographing | 506 |
| 4,124 | 17.0 | 5,412 | 17.9 | 3,408 | 16.7 | 3,862 | 17.7 | 15,111 | 20.6 | 4,874 | 23.1 | 10,237 | 19.6 | 14 | 1.4 | Bookbinding and blank-book making | 501 |
| 1,999 | 15.4 | 4,059 | 16.3 | 1,633 | 17.4 | 3,927 | 18.4 | 10,758 | 20.2 | 2,802 | 35.7 | 7,956 | 17.5 | 13 | 2.0 | Photoengraving, not done in printing establishments | 507 |
| 1,127 | 15.6 | 1,362 | 15.2 | 1,021 | 16.4 | 1,083 | 15.6 | 3,237 | 17.7 | 1,061 | 23.1 | 2,176 | 15.9 | 11 | 2.0 | Electroplating | 1205 |
| 707 | 14.3 | 1,353 | 16.7 | 576 | 14.0 | 926 | 15.1 | 2,557 | 16.7 | 766 | 24.0 | 1,791 | 14.8 | 10 | 1.7 | Models and patterns, not including paper patterns | 1625 |
| 2,782 | 16.9 | 3,079 | 18.9 | 2,472 | 17.4 | 2,359 | 19.9 | 9,268 | 18.7 | 3,675 | 17.8 | 5,593 | 19.3 | 10 | 1.5 | Miscellaneous articles, n. e. c | 1612 |
| 884 | 8.3 | 1,152 | 9.5 | 737 | 8.8 | 816 | 10.4 | 6,882 | 15.3 | 3,652 | 18.2 | 3,230 | 13.0 | 43 | 3.6 | Concrete products | 1005 |
| 906 | 6.6 | 1,102 | 7.5 | 758 | 6.4 | 605 | 5.6 | 6,812 | 14.7 | 1,625 | 23.6 | 2,187 | 8.2 | 10 | .9 | Embroideries; trimmings (not made in textile mills); etc | 221 |
| 3,291 | 15.9 | 3,710 | 15.0 | 2,972 | 17.4 | 3,016 | 16.9 | 10,945 | 15.4 | 1,410 | 14.6 | 6,535 | 16.1 | 8 | .8 | Jewelry | 1210 |
| 2,825 | 15.3 | 2,805 | 12.7 | 2,485 | 16.3 | 2,163 | 13.4 | 7,827 | 13.9 | 2,993 | 16.4 | 4,834 | 12.6 | 24 | 1.7 | Marble, granite, slate, and other stone, cut and shaped | 1014 |
| 2,735 | 15.5 | 3,352 | 14.8 | 2,270 | 16.6 | 2,463 | 16.5 | 9,035 | 14.7 | 3,122 | 14.7 | 5,913 | 14.7 | 51 | 4.7 | Signs and advertising novelties | 1640 |
| 1,317 | 5.9 | 1,854 | 6.3 | 1,089 | 6.5 | 1,164 | 6.7 | 21,079 | 13.2 | 7,102 | 11.4 | 13,977 | 14.4 | 87 | 2.7 | Beverages, nonalcoholic | 101 |

TABLE II.—*Concentration in manufacturing indus*

[Values in thou

| Industry number | Industry | Largest four producers | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Persons employed | | Wages and salaries | | Wage earners | | Wages | | Value of product | | Cost of materials, etc.[1] | | Value added by manufacturer[2] | | Number of establishments | |
| | | Number | Percent of industry | Amount | Percent of industry | Number | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Number | Percent of industry |
| | | 210 SMALL INDUSTRIES—Continued | | | | | | | | | | | | | | | |
| 908 | Pocketbooks, purses, and cardcases | 1,034 | 8 2 | 906 | 7 8 | 993 | 8 7 | 787 | 8 5 | 3,632 | 8 4 | 1,984 | 8 9 | 1,618 | 7 9 | 5 | 1 6 |
| 214 | Furnishing goods, men's | 1 375 | 5 6 | 1,077 | 5 0 | 1,305 | 5.7 | 920 | 5 4 | 6,949 | 7.7 | 3,796 | 7 9 | 3,153 | 7 6 | 4 | .5 |
| 218 | Housefurnishings | 1,353 | 8 1 | 1,233 | 8 0 | 1,231 | 8.6 | 1,017 | 9 4 | 6,088 | 7 7 | 4,259 | 7 7 | 2,429 | 7 7 | 6 | 7.8 |
| 1615 | Fur goods | 273 | 1.7 | 584 | 2 0 | 232 | 1 8 | 466 | 2 2 | 3,768 | 2 6 | 2,786 | 3 1 | 982 | 1 8 | 4 | .2 |

* Large industries, those employing more than 100,000 persons; medium industries, those employing 25,000 to 100,000 persons; small industries, those employing less than 25,000 persons.

[1] Includes cost of materials, mill and shop supplies, containers, fuel, and purchased electric energy.

[2] Value of products less cost of materials, containers, fuel, and purchased electric energy.

TABLE III.—*Concentration in manufacturing indus*

[Values in thou

8 LARGE IN

| Industry No. | Industry | Largest 4 producers | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Persons employed | | Wages and salaries | | Wage earners | | Wages | | Value of product | | Cost of materials, etc.[1] | | Value added by manufacture[2] | | Number of establishments | |
| | | Number | Percent of industry | Amount | Percent of industry | Number | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Number | Percent of industry |
| 212 | Wool and hair manufactures | 37, 509 | 21 3 | 36, 134 | 20. 6 | 35, 547 | 21. 4 | 32, 273 | 21 2 | 165, 458 | 23. 3 | 102. 679 | 23 8 | 62, 779 | 22. 5 | 37 | 5. 3 |
| 213 | Men's cotton garments | 13, 679 | 10 6 | 9. 043 | 10 4 | 13, 059 | 10 7 | 8, 046 | 10 9 | 29. 112 | 8. 8 | 15, 815 | 8 6 | 13, 297 | 9. 0 | 49 | 4. 2 |
| 203 | Cotton manufactures | 36, 253 | 9 2 | 26, 263 | 9 5 | 35, 430 | 9. 2 | 24, 581 | 9 9 | 82, 831 | 8. 0 | 49, 169 | 7 8 | 33, 662 | 8 4 | 25 | 2. 0 |
| 1305 | Machinery not elsewhere classified | 11, 927 | 8 4 | 17. 628 | 8 8 | 9, 402 | 8 6 | 12, 867 | 9 8 | 40, 033 | 6 9 | 13, 227 | 6. 1 | 26, 806 | 7. 4 | 12 | .5 |
| 309 | Furniture, including store and office fixtures | 7, 235 | 4 9 | 6, 797 | 4 7 | 6, 564 | 5 0 | 5, 772 | 5. 1 | 24, 106 | 5 5 | 11, 400 | 5. 5 | 12 706 | 5. 6 | 16 | .5 |
| 215 | Men's, youths', and boys' clothing, n. e. c. | 8, 956 | 5. 3 | 9 851 | 5. 6 | 8, 183 | 5. 3 | 8, 331 | 5 7 | 31, 233 | 5 0 | 14. 640 | 5. 0 | 16, 593 | 5. 2 | 14 | .5 |
| 508 | Printing and publishing, book, music, and job. | 7, 893 | 4 7 | 12, 128 | 4 7 | 6, 450 | 5. 1 | 8, 997 | 5 3 | 30, 290 | 4 4 | 6, 818 | 3 5 | 23, 472 | 4. 6 | 10 | .1 |
| 216 | Women's, misses', and children's apparel, n. e. c. | 5, 223 | 1 8 | 3. 533 | 1 2 | 5, 042 | 1. 9 | 3, 162 | 1 3 | 17, 943 | 1 4 | 7, 794 | 1 3 | 10, 149 | 1. 6 | 10 | .1 |
| | | 20 MEDIUM INDUSTRIES* | | | | | | | | | | | | | | | |
| 1410 | Ship and boat building, steel and wooden, including repair work | 21, 898 | 42 7 | 31, 062 | 14 2 | 19, 403 | 43. 2 | 25, 137 | 45. 3 | 69, 014 | 44. 6 | 25, 615 | 42 4 | 43, 399 | 46. 0 | 20 | 3. 6 |
| 1109 | Hardware not elsewhere classified | 16, 346 | 34 1 | 20, 138 | 37. 1 | 14, 479 | 34 9 | 17, 005 | 40. 1 | 53, 689 | 36. 3 | 19, 331 | 33. 7 | 34, 358 | 38 0 | 9 | 2. 2 |
| 705 | Petroleum refining | 32, 404 | 35 2 | 52, 235 | 36. 4 | 27, 379 | 35. 3 | 40, 420 | 36 9 | 621, 662 | 33. 8 | 491, 824 | 33 3 | 129, 838 | 36. 1 | 52 | 13. 2 |
| 626 | Paints, pigments, and varnishes | 10, 828 | 28 0 | 14, 559 | 25. 7 | 8, 587 | 31 0 | 10, 381 | 32 2 | 134, 129 | 32 2 | 69, 409 | 29 9 | 64, 720 | 34 9 | 50 | 4. 7 |
| 1319 | Radio apparatus and phonographs | 18, 910 | 36 3 | 21, 997 | 38. 1 | 15, 539 | 34 7 | 15, 014 | 35 0 | 57, 368 | 28 5 | 25, 729 | 24 8 | 31, 639 | 32 5 | 8 | 4 0 |
| 1304 | Engines, turbines, water wheels, and windmills. | 7, 301 | 26 2 | 11, 455 | 29 7 | 5, 655 | 25 7 | 7, 887 | 29 4 | 28, 899 | 28 9 | 10, 286 | 24. 5 | 18, 613 | 32. 1 | 4 | 2. 6 |
| 1127 | Wirework not elsewhere classified | 6, 750 | 23. 5 | 8, 675 | 25. 7 | 5, 960 | 23. 7 | 6, 903 | 27. 1 | 26, 192 | 22 3 | 10, 215 | 18 4 | 15, 977 | 25. 8 | 10 | 1. 9 |
| 1322 | Foundries | 19, 017 | 19 5 | 27, 134 | 23 5 | 18, 659 | 20. 8 | 26, 341 | 27. 7 | 62, 856 | 25. 1 | 23, 122 | 25 7 | 39. 734 | 24. 7 | 28 | 2. 2 |
| 907 | Leather: tanned, curried, and finished | 10, 362 | 18. 9 | 13, 512 | 20 3 | 9, 644 | 18 9 | 11, 804 | 21 2 | 67, 071 | 21. 8 | 41, 386 | 20 9 | 25, 685 | 23. 3 | 27 | 7. 0 |
| 1122 | Structural and ornamental metal work | 8, 622 | 24. 8 | 9, 656 | 22 6 | 7, 414 | 27 2 | 7, 319 | 26. 0 | 39, 000 | 34. 3 | 25, 141 | 27 2 | 13, 859 | 20. 3 | 21 | 1. 9 |
| 1318 | Machine-tool accessories and machinists' precision tools. | 5, 393 | 19 8 | 8, 987 | 20. 1 | 4, 954 | 21 4 | 7, 906 | 23. 0 | 20, 897 | 21. 6 | 7, 439 | 27 6 | 13, 458 | 19. 2 | 4 | .5 |
| 1004 | Clay products, other than pottery | 7, 256 | 14 7 | 5, 661 | 12. 9 | 6, 989 | 15. 7 | 5, 121 | 14 8 | 21, 412 | 19. 2 | 8, 537 | 22 5 | 12, 875 | 17. 6 | 51 | 4. 8 |
| 209 | Rayon manufactures | 12, 702 | 17. 2 | 9, 556 | 15 3 | 12, 484 | 17. 8 | 8, 741 | 15. 9 | 35, 455 | 17. 3 | 21. 104 | 18 7 | 14, 351 | 15. 7 | 19 | 4. 2 |
| 408 | Paper goods not elsewhere classified | 5 142 | 15 6 | 5, 706 | 14 4 | 4, 397 | 16 0 | 4 283 | 16 2 | 25, 946 | 13 2 | 12, 657 | 11 5 | 13, 289 | 15. 5 | 10 | 1. 8 |
| 112 | Confectionery | 5. 721 | 9 9 | 5. 350 | 10 3 | 5, 296 | 10. 2 | 4, 274 | 10 9 | 31, 960 | 12 3 | 17, 019 | 11 1 | 14, 941 | 14. 1 | 6 | .5 |
| 304 | Boxes, wooden, except cigar boxes | 2, 045 | 8 2 | 2, 169 | 11 3 | 1, 816 | 7 9 | 1, 697 | 11 3 | 8, 758 | 13. 8 | 4, 553 | 14 2 | 4 205 | 13. 5 | 39. | 5. 9 |
| 204 | Dyeing and finishing cotton, rayon, and silk. | 11. 016 | 13. 9 | 12, 030 | 14 1 | 9, 621 | 13 5 | 9, 088 | 13. 7 | 26, 293 | 11. 8 | 10, 003 | 9 8 | 16, 290 | 13. 4 | 10 | 1. 9 |
| 210 | Silk manufactures | 4, 290 | 8. 5 | 4. 535 | 9. 7 | 4, 588 | 8 2 | 3, 808 | 9 4 | 12, 782 | 8 5 | 5, 840 | 8 4 | 6, 942 | 8. 6 | 5 | .8 |
| 1326 | Machine shops | 8, 564 | 8. 6 | 11, 868 | 8 8 | 7, 130 | 8 6 | 9, 149 | 9 4 | 31, 391 | 7 5 | 10, 304 | 6 0 | 21, 087 | 8 6 | 8 | .3 |
| 314 | Planing-mill products (including general millwork). | 2, 858 | 5 0 | 2, 636 | 4 6 | 2 553 | 5. 3 | 2, 160 | 5 1 | 8, 964 | 4. 6 | 4, 605 | 4 2 | 4, 359 | 5. 0 | 18 | .7 |
| | | 109 SMALL INDUSTRIES* | | | | | | | | | | | | | | | |
| 1636 | Photographic apparatus and materials and projection apparatus. | 12. 396 | 80 2 | 18, 541 | 79. 9 | 9, 754 | 81. 3 | 13. 005 | 82. 3 | 57, 395 | 77. 6 | 12, 978 | 49 7 | 44, 417 | 92. 9 | 6 | 5. 1 |

For footnotes, see end of table.

*tries, 1935, based on value of products*—Continued

sands of dollars]

| Largest eight producers | | | | | | | | | | | | | | | | Industry | Industry number |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Persons employed | | Wages and salaries | | Wage earners | | Wages | | Value of product | | Cost of materials, etc.[3] | | Value added by manufacture[4] | | Number of establishments | | | |
| Number | Percent of industry | Amount | Percent of industry | Number | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Number | Percent of industry | | |
| 210 SMALL INDUSTRIES—Continued | | | | | | | | | | | | | | | | | |
| 1,732 | 13 8 | 1,615 | 13 9 | 1,501 | 13 9 | 1,201 | 14 0 | 6,795 | 15 8 | 3,579 | 16 1 | 3,216 | 15 5 | 9 | 2 8 | Pocketbooks, purses, and cardcases | 908 |
| 2,772 | 11 2 | 2,067 | 9 6 | 2,635 | 11 6 | 1,767 | 10 3 | 11,635 | 13 0 | 6,464 | 13 5 | 5,171 | 12 4 | 8 | 1 0 | Furnishing goods, men's | 214 |
| 2,218 | 13 3 | 1,932 | 12 6 | 1,997 | 13 9 | 1,531 | 14 1 | 11,056 | 12 7 | 7,104 | 12 8 | 3,952 | 12 5 | 20 | 25 9 | Housefurnishings | 218 |
| 193 | 3 0 | 1,012 | 3 5 | 151 | 3 4 | 816 | 3 9 | 6,411 | 4 5 | 4,535 | 5 1 | 1,879 | 3 4 | 8 | .4 | Fur goods | 1615 |

[3] The data for the largest 4 enterprises are combined with those for the largest 8 enterprises in order to avoid approximate disclosures of individual data.
[4] The data for the "remainder" of the industry are included in the data for the largest 8 enterprises in order to avoid approximate disclosures of individual data.

*tries, 1935, based on value added by manufacture*

sands of dollars]

DUSTRIES*

| Largest 8 producers | | | | | | | | | | | | | | | | Industry | Industry No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Persons employed | | Wages and salaries | | Wage earners | | Wages | | Value of product | | Cost of materials, etc.[3] | | Value added by manufacture[4] | | Number of establishments | | | |
| Number | Percent of industry | Amount | Percent of industry | Number | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Number | Percent of industry | | |
| 50,349 | 28 6 | 19,353 | 27 9 | 17,778 | 28 7 | 11,050 | 28 9 | 233,745 | 32 9 | 150,152 | 34 9 | 83,293 | 29 8 | 65 | 9 3 | Wool and hair manufactures | 212 |
| 21,861 | 17 0 | 11,514 | 16 7 | 20,959 | 17 2 | 13,010 | 17 7 | 55,971 | 16 9 | 34,426 | 18 8 | 21,548 | 14 5 | 72 | 6 1 | Men's cotton garments | 213 |
| 57,275 | 14 5 | 40,380 | 14 6 | 55,992 | 14 6 | 37,796 | 15 2 | 146,334 | 14 2 | 90,278 | 14 1 | 56,056 | 13 9 | 54 | 4 1 | Cotton manufactures | 203 |
| 16,648 | 11 7 | 24,331 | 12 1 | 13,003 | 11 8 | 12,858 | 13 6 | 64,175 | 11 0 | 24,002 | 11 0 | 40,173 | 11 0 | 23 | .9 | Machinery not elsewhere classified | 1305 |
| 11,841 | 8 0 | 11,426 | 7 9 | 10,801 | 8 2 | 9,638 | 8 5 | 38,303 | 8 8 | 19,064 | 9 2 | 19,239 | 8 5 | 22 | .7 | Furniture, including store and office fixtures | 309 |
| 12,698 | 7 5 | 11,135 | 8 1 | 11,481 | 7 4 | 11,785 | 8 1 | 51,964 | 8 4 | 24,260 | 8 3 | 27,704 | 8 6 | 23 | .8 | Men's, youths', and boys' clothing, n. e. c. | 215 |
| 10,863 | 6 5 | 10,677 | 6 5 | 8,357 | 6 6 | 11,688 | 6 9 | 45,175 | 6 5 | 11,163 | 5 7 | 31,012 | 6 7 | 53 | .5 | Printing and publishing, book, music, and job | 508 |
| 7,811 | 2 7 | 5,842 | 1 9 | 7,412 | 2 8 | 4,965 | 2 0 | 29,609 | 2 3 | 13,810 | 2 2 | 15,799 | 2 4 | 18 | 2 | Women's, misses', and children's apparel, n. e. c. | 216 |
| 20 MEDIUM INDUSTRIES* | | | | | | | | | | | | | | | | | |
| 32,620 | 63 6 | 44,997 | 64 0 | 28,352 | 63 2 | 35,382 | 63 8 | 100,158 | 64 7 | 40,688 | 67 3 | 59,470 | 63 0 | 26 | 4 7 | Ship and boat building, steel and wooden, including repair work | 1410 |
| 20,775 | 13 7 | 25,082 | 16 2 | 18,297 | 14 1 | 20,677 | 48 8 | 67,230 | 45 5 | 25,041 | 43 6 | 42,189 | 46 7 | 15 | 3 7 | Hardware not elsewhere classified | 1109 |
| 53,375 | 58 0 | 83,778 | 58 4 | 15,719 | 59 0 | 66,135 | 60 3 | 1,082,484 | 58 9 | 870,741 | 58 9 | 211,743 | 58 8 | 94 | 23 8 | Petroleum refining | 705 |
| 13,557 | 35 1 | 18,318 | 32 3 | 10,697 | 38 6 | 12,856 | 39 9 | 174,108 | 41 8 | 93,994 | 40 5 | 80,174 | 43 3 | 70 | 6 5 | Paints, pigments, and varnishes | 626 |
| 23,605 | 15 3 | 26,451 | 15 8 | 19,735 | 14 1 | 18,679 | 43 5 | 77,569 | 38 6 | 37,511 | 36 2 | 40,058 | 41 1 | 13 | 6 6 | Radio apparatus and phonographs | 1319 |
| 11,378 | 10 9 | 17,268 | 11 7 | 8,928 | 10 5 | 12,106 | 45 1 | 47,233 | 47 2 | 20,683 | 49 2 | 26,550 | 45 8 | 9 | 6 0 | Engines, turbines, water wheels, and wind mills | 1301 |
| 10,418 | 36 2 | 12,359 | 36 6 | 9,395 | 37 3 | 10,052 | 39 5 | 41,481 | 35 3 | 19,251 | 34 6 | 22,230 | 35 9 | 25 | 4 7 | Wirework not elsewhere classified | 1127 |
| 26,117 | 26 8 | 35,239 | 30 5 | 25,150 | 28 0 | 33,122 | 33 6 | 82,311 | 32 9 | 30,281 | 33 7 | 52,027 | 32 4 | 48 | 3 8 | Foundries | 1322 |
| 16,239 | 29 6 | 20,148 | 30 7 | 15,108 | 29 7 | 17,679 | 31 7 | 105,753 | 34 3 | 66,697 | 33 7 | 39,056 | 35 4 | 51 | 13 3 | Leather: tanned, curried, and finished | 907 |
| 10,483 | 30 1 | 12,203 | 28 6 | 8,913 | 32 7 | 9,106 | 32 3 | 50,622 | 31 5 | 32,551 | 35 2 | 18,071 | 26 5 | 28 | 2 5 | Structural and ornamental metal work | 1122 |
| 7,657 | 28 1 | 12,724 | 28 5 | 6,817 | 29 5 | 10,606 | 30 8 | 29,771 | 30 7 | 10,334 | 38 4 | 19,437 | 27 8 | 12 | 1 6 | Machine-tool accessories and machinists' precision tools | 1318 |
| 9,696 | 19 7 | 8,363 | 19 0 | 9,152 | 20 5 | 7,097 | 20 5 | 29,598 | 26 6 | 11,578 | 30 5 | 18,020 | 24 6 | 63 | 5 9 | Clay products, other than pottery | 1004 |
| 18,177 | 25 0 | 11,391 | 23 0 | 17,966 | 25 6 | 13,039 | 23 7 | 52,506 | 25 6 | 30,851 | 27 3 | 21,655 | 23 7 | 27 | 6 0 | Rayon manufactures | 209 |
| 7,034 | 21 3 | 8,313 | 21 0 | 5,957 | 21 7 | 6,088 | 23 0 | 46,484 | 23 7 | 25,955 | 23 6 | 20,529 | 23 9 | 22 | 4 0 | Paper goods not elsewhere classified | 408 |
| 9,172 | 15 8 | 8,948 | 17 3 | 8,208 | 15 9 | 6,845 | 17 4 | 51,827 | 19 9 | 29,435 | 19 2 | 22,392 | 21 1 | 16 | 1 2 | Confectionery | 112 |
| 4,179 | 16 7 | 3,580 | 18 7 | 3,874 | 16 8 | 2,939 | 19 6 | 13,799 | 21 8 | 7,324 | 22 8 | 6,475 | 20 8 | 51 | 4 7 | Boxes, wooden, except cigar boxes | 304 |
| 18,036 | 22 7 | 19,170 | 22 5 | 16,074 | 22 5 | 14,571 | 22 0 | 48,254 | 21 6 | 23,661 | 23 2 | 24,593 | 20 2 | 20 | 3 8 | Dyeing and finishing cotton, rayon, and silk | 204 |
| 7,678 | 13 1 | 6,812 | 14 5 | 7,071 | 12 7 | 5,595 | 13 8 | 25,021 | 16 7 | 12,511 | 18 0 | 12,510 | 15 6 | 10 | 1 6 | Silk manufactures | 210 |
| 13,008 | 13 1 | 17,664 | 13 1 | 11,141 | 13 5 | 13,873 | 14 2 | 61,157 | 14 6 | 28,649 | 16 6 | 32,508 | 13 2 | 20 | .7 | Machine shops | 1326 |
| 4,225 | 7 4 | 4,195 | 7 3 | 3,703 | 7 7 | 3,416 | 8 1 | 15,952 | 8 1 | 9,503 | 8 7 | 6,449 | 7 4 | 29 | 1 1 | Planing-mill products (including general millwork | 314 |
| 109 SMALL INDUSTRIES* | | | | | | | | | | | | | | | | | |
| 13,256 | 86 8 | 20,086 | 86 7 | 10,370 | 86 4 | 13,921 | 88 1 | 62,821 | 84 9 | 15,325 | 58 6 | 47,496 | 99 3 | 15 | 12 7 | Photographic apparatus and materials and projection apparatus | 1636 |

TABLE III.—*Concentration in manufacturing industries,*

[Values in thou

| Industry number | Industry | Largest four producers | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Persons employed | | Wages and salaries | | Wage earners | | Wages | | Value of product | | Cost of materials, etc.[1] | | Value added by manufacturer[2] | | Number of establishments | |
| | | Number | Percent of industry | Amount | Percent of industry | Number | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Number | Percent of industry |
| | | 109 SMALL INDUSTRIES—Continued | | | | | | | | | | | | | | | |
| 602 | Ammunition and related products | 5,650 | 89 4 | 5,930 | 88 8 | 5,058 | 90 3 | 4,687 | 91 5 | 24,107 | 91 6 | 9,418 | 92 3 | 14,689 | 91 2 | 7 | 53 8 |
| 613 | Explosives | 4,103 | 77 7 | 5,830 | 78 1 | 3,654 | 79 9 | 4,708 | 83 4 | 33,178 | 81 6 | 13,428 | 79 0 | 19,750 | 83 4 | 36 | 48 6 |
| 1106 | Firearms | 4,206 | 78 6 | 5,254 | 79 9 | 3,808 | 78 4 | 4,482 | 81 5 | 10,670 | 81 9 | 2,680 | 79 1 | 7,990 | 82 9 | 6 | 27 3 |
| 1206 | Fire extinguishers, chemical | 810 | 73 2 | 1,120 | 76 4 | 618 | 76 7 | 781 | 81 0 | 4,097 | 76 6 | 1,832 | 74 1 | 2,265 | 78 9 | 4 | 16 0 |
| 1201 | Aluminum products | 19,817 | 76 2 | 19,410 | 75 7 | 11,697 | 76 2 | 15,673 | 77 1 | 78,789 | 75 7 | 44,379 | 76 0 | 34,410 | 75 4 | 16 | 9 4 |
| 631 | Soap | 10,005 | 58 6 | 13,306 | 59 4 | 8,319 | 59 8 | 9,809 | 64 0 | 171,847 | 71 8 | 97,169 | 69 7 | 74,678 | 74 9 | 17 | 7 2 |
| 1634 | Pens, fountain and stylographic; pen points, gold, steel, brass | 2,812 | 61 6 | 2,849 | 59 7 | 2,311 | 61 1 | 2,092 | 61 0 | 12,595 | 70 4 | 3,690 | 63 8 | 8,905 | 73 6 | 4 | 7 8 |
| 1611 | Soda fountains and accessories | 1,027 | 69 5 | 1,649 | 70 8 | 775 | 70 7 | 1,056 | 73 6 | 6,071 | 73 9 | 3,079 | 74 7 | 2,992 | 73 2 | 8 | 16 7 |
| 1312 | Sewing machines and attachments | 7,135 | 82 0 | 9,334 | 80 6 | 6,288 | 83 7 | 7,596 | 83 9 | 17,857 | 78 9 | 4,800 | 79 6 | 12,057 | 72 6 | 5 | 12 9 |
| 106 | Cereal preparations | 5,862 | 63 7 | 7,537 | 65 4 | 5,221 | 66 2 | 6,085 | 71 4 | 98,213 | 67 0 | 51,848 | 62 9 | 46,365 | 72 2 | 8 | 7 3 |
| 129 | Sugar, beet | 6,095 | 56 4 | 7,692 | 61 4 | 5,168 | 56 0 | 5,751 | 61 6 | 63,011 | 66 2 | 46,315 | 65 1 | 16,696 | 69 5 | 45 | 58 4 |
| 1222 | Watchcases | 1,628 | 68 9 | 2,108 | 68 7 | 1,399 | 69 4 | 1,654 | 71 0 | 4,066 | 58 2 | 1,286 | 49 6 | 2,780 | 65 8 | 4 | 13 8 |
| 404 | Card cutting and designing | 1,566 | 44 7 | 1,896 | 47 1 | 1,362 | 46 2 | 1,470 | 51 7 | 11,004 | 64 1 | 4,890 | 63 5 | 6,114 | 64 2 | 5 | 6 6 |
| 1001 | Asbestos products other than steam packing, etc. | 7,555 | 68 8 | 8,113 | 67 8 | 6,715 | 69 8 | 6,497 | 69 9 | 24,089 | 63 1 | 10,830 | 63 1 | 13,259 | 63 1 | 14 | 19 4 |
| 630 | Salt | 2,475 | 44 6 | 2,945 | 46 0 | 2,238 | 45 0 | 2,314 | 47 4 | 17,703 | 59 5 | 5,883 | 53 8 | 11,820 | 62 9 | 14 | 29 2 |
| 1218 | Smelting and refining, zinc | 5,442 | 56 2 | 7,339 | 58 8 | 4,884 | 55 3 | 5,857 | 56 8 | 42,535 | 61 5 | 26,499 | 60 8 | 16,036 | 62 7 | 10 | 38 5 |
| 607 | Candles | 520 | 57 8 | 616 | 57 2 | 419 | 58 8 | 353 | 58 9 | 2,887 | 60 8 | 1,432 | 59 7 | 1,445 | 61 9 | 4 | 17 4 |
| 1109 | Motorcycles, bicycles, and parts | 3,402 | 59 0 | 4,044 | 61 6 | 2,957 | 58 0 | 3,248 | 62 3 | 13,640 | 59 1 | 7,293 | 57 0 | 6,347 | 61 8 | 6 | 36 1 |
| 1647 | Tobacco (chewing and smoking) and snuff | 4,906 | 41 4 | 4,842 | 46 4 | 4,492 | 44 6 | 3,699 | 48 5 | 78,447 | 57 9 | 50,402 | 56 0 | 28,045 | 61 6 | 11 | 9 6 |
| 1611 | Dentists' equipment and supplies | 2,403 | 55 5 | 3,087 | 52 6 | 2,104 | 59 8 | 2,222 | 61 2 | 11,542 | 50 2 | 3,097 | 33 9 | 8,445 | 60 9 | 7 | 8 0 |
| 633 | Wood distillation and charcoal manufacture | 2,050 | 47 5 | 1,961 | 52 2 | 1,776 | 46 7 | 1,443 | 51 3 | 8,555 | 53 6 | 3,663 | 46 2 | 4,892 | 60 8 | 7 | 11 7 |
| 220 | Artificial leather, oil cloth | 2,425 | 56 3 | 3,115 | 55 6 | 2,062 | 56 5 | 2,443 | 58 1 | 19,809 | 57 7 | 13,067 | 56 4 | 6,742 | 60 5 | 7 | 21 2 |
| 603 | Baking powder, yeast, and other leavening compounds | 2,133 | 63 6 | 4,285 | 67 7 | 1,690 | 63 4 | 2,954 | 69 1 | 18,458 | 57 1 | 7,867 | 54 6 | 10,591 | 59 0 | 11 | 23 9 |
| 1315 | Washing machines, wringers, driers, ironing machines | 5,492 | 53 5 | 7,381 | 58 5 | 4,639 | 53 0 | 5,926 | 60 2 | 34,879 | 55 9 | 20,147 | 54 4 | 14,732 | 57 9 | 6 | 14 6 |
| 1311 | Scales and balances | 1,296 | 39 6 | 1,762 | 42 0 | 949 | 38 4 | 1,085 | 41 2 | 7,048 | 52 7 | 1,561 | 41 2 | 5,487 | 57 2 | 5 | 8 9 |
| 1617 | Hair work | 247 | 40 0 | 361 | 46 6 | 193 | 38 5 | 156 | 35 7 | 1,216 | 44 4 | 265 | 25 5 | 951 | 56 0 | 4 | 9 3 |
| 115 | Flavoring extracts, syrups, and related products | 533 | 11 7 | 819 | 12 2 | 358 | 12 3 | 364 | 13 7 | 32,301 | 47 6 | 10,648 | 36 5 | 21,653 | 56 0 | 12 | 2 9 |
| 1614 | Foundry supplies | 163 | 28 2 | 251 | 27 3 | 118 | 29 5 | 151 | 33 9 | 3,322 | 50 9 | 1,698 | 49 3 | 1,624 | 52 9 | 5 | 10 9 |
| 625 | Oils not elsewhere classified | 831 | 36 7 | 1,084 | 36 8 | 692 | 39 1 | 785 | 43 3 | 17,028 | 40 8 | 10,671 | 36 8 | 6,357 | 49 7 | 10 | 9 4 |
| 1128 | Wrought pipe, welded and heavy riveted | 4,863 | 41 2 | 6,194 | 42 1 | 4,520 | 42 1 | 5,339 | 45 2 | 34,663 | 46 9 | 19,060 | 45 4 | 15,603 | 49 0 | 8 | 16 7 |
| 1654 | Wool pulling | 349 | 36 7 | 441 | 35 7 | 322 | 37 2 | 372 | 38 2 | 4,565 | 36 8 | 2,917 | 32 4 | 1,648 | 48 6 | 4 | 23 5 |
| 1217 | Smelting and refining, nonferrous metals other than silver, gold, platinum | 2,068 | 45 7 | 2,446 | 40 4 | 1,713 | 47 5 | 1,636 | 71 4 | 26,491 | 42 3 | 21,424 | 41 2 | 5,067 | 47 7 | 16 | 16 2 |
| 111 | Condensed and evaporated milk | 4,358 | 44 1 | 4,485 | 41 1 | 3,859 | 45 6 | 3,618 | 43 5 | 73,218 | 42 7 | 53,956 | 41 2 | 19,262 | 47 5 | 168 | 36 0 |
| 122 | Malt | 697 | 40 6 | 1,408 | 39 3 | 589 | 40 9 | 925 | 39 4 | 32,778 | 43 6 | 23,997 | 42 5 | 8,781 | 47 0 | 12 | 22 2 |
| 1633 | Pencils, lead (including mechanical) and crayons | 2,579 | 42 3 | 2,859 | 45 2 | 2,165 | 41 8 | 1,894 | 44 8 | 8,960 | 44 8 | 3,460 | 41 9 | 5,500 | 46 9 | 4 | 8 5 |
| 1404 | Carriages, wagons, sleighs and sleds | 701 | 37 7 | 722 | 40 9 | 600 | 39 7 | 529 | 41 2 | 2,865 | 41 8 | 1,405 | 38 2 | 1,460 | 46 2 | 4 | 8 9 |
| 1628 | Musical instruments and parts and materials, n. e. c. | 1,386 | 39 4 | 1,861 | 44 0 | 1,067 | 37 2 | 1,281 | 42 5 | 3,662 | 40 4 | 778 | 28 5 | 2,884 | 45 6 | 4 | 4 3 |
| 1644 | Steam and other packing, pipe and boiler covering, gaskets, n. e. c. | 2,965 | 51 5 | 3,310 | 46 9 | 2,576 | 54 0 | 2,492 | 52 6 | 11,367 | 46 9 | 5,807 | 49 4 | 5,560 | 44 5 | 9 | 7 3 |
| 1638 | Roofing, built-up and roll, asphalt shingles; roof coatings | 3,005 | 40 8 | 3,595 | 41 4 | 2,685 | 41 4 | 2,838 | 42 4 | 31,537 | 41 4 | 16,908 | 39 3 | 14,629 | 44 1 | 16 | 14 9 |
| 1603 | Artists' materials | 184 | 35 0 | 284 | 39 8 | 115 | 32 9 | 121 | 35 9 | 1,255 | 51 6 | 736 | 60 2 | 519 | 42 9 | 4 | 8 5 |
| 2171 | Gloves and mittens, cloth or cloth and leather combined | 3,684 | 43 8 | 2,069 | 40 3 | 3,608 | 44 8 | 1,944 | 43 3 | 8,152 | 43 0 | 4,438 | 43 1 | 3,714 | 42 9 | 23 | 20 0 |
| 1102 | Cast-iron pipe and fittings | 5,003 | 34 3 | 4,001 | 31 5 | 4,711 | 34 8 | 3,412 | 32 9 | 15,983 | 42 2 | 6,105 | 41 3 | 9,878 | 42 8 | 11 | 15 5 |
| 618 | Ink, printing | 1,283 | 38 3 | 2,227 | 36 4 | 935 | 39 4 | 1,309 | 40 4 | 16,400 | 47 5 | 9,603 | 51 7 | 6,797 | 42 6 | 41 | 21 5 |
| 1627 | Musical instrument parts and materials; piano and organ | 553 | 40 2 | 577 | 39 6 | 518 | 42 6 | 440 | 42 8 | 1,237 | 38 8 | 416 | 34 0 | 821 | 41 8 | 4 | 11 8 |
| 616 | Glue and gelatin | 1,467 | 37 6 | 1,773 | 34 2 | 1,329 | 40 8 | 1,443 | 40 8 | 9,788 | 34 7 | 4,384 | 29 1 | 5,404 | 41 3 | 10 | 13 5 |
| 1108 | Galvanizing and other coating | 598 | 42 6 | 760 | 40 3 | 549 | 45 7 | 480 | 37 8 | 1,791 | 34 5 | 471 | 23 5 | 1,320 | 41 3 | 4 | 6 1 |
| 604 | Blacking, stains, and dressings | 464 | 21 3 | 745 | 22 8 | 358 | 23 9 | 365 | 24 9 | 6,546 | 36 5 | 2,618 | 31 3 | 3,928 | 41 1 | 5 | 3 0 |
| 1607 | Carbon paper and inked ribbons | 618 | 31 6 | 1,090 | 36 2 | 450 | 31 6 | 558 | 34 3 | 5,104 | 34 7 | 2,176 | 29 0 | 2,928 | 40 7 | 4 | 7 1 |
| 411 | Wall paper | 1,872 | 38 3 | 2,145 | 35 9 | 1,675 | 39 3 | 1,710 | 38 1 | 7,292 | 37 1 | 3,317 | 33 5 | 3,975 | 40 7 | 7 | 17 5 |
| 901 | Belting and packing, leather | 974 | 32 1 | 1,047 | 26 1 | 852 | 36 1 | 789 | 31 3 | 8,142 | 37 9 | 4,135 | 35 8 | 4,007 | 40 2 | 5 | 2 7 |
| 621 | Mucilage, paste, and other adhesives, except glue and rubber cement | 128 | 26 9 | 226 | 30 5 | 79 | 29 6 | 92 | 31 8 | 1,293 | 35 6 | 497 | 30 2 | 796 | 40 1 | 4 | 6 0 |
| 1653 | Beauty-shop equipment, except furniture | 676 | 25 4 | 709 | 23 2 | 607 | 27 9 | 513 | 26 1 | 4,914 | 39 2 | 1,936 | 38 6 | 2,978 | 39 7 | 4 | 4 9 |
| 1103 | Cutlery (not including silver and plated cutlery) and edge tools | 2,271 | 14 7 | 2,809 | 15 7 | 2,009 | 14 6 | 1,968 | 14 5 | 18,151 | 35 5 | 2,875 | 22 8 | 15,276 | 39 6 | 5 | 1 9 |
| 1202 | Clocks, watches, etc., and materials and parts except watchcases | 8,331 | 41 1 | 9,344 | 41 4 | 7,499 | 41 6 | 7,689 | 42 0 | 21,565 | 35 2 | 6,290 | 27 9 | 15,275 | 39 5 | 5 | 6 6 |
| 1649 | Umbrellas, parasols, and canes | 905 | 37 2 | 815 | 36 0 | 839 | 38 4 | 621 | 36 3 | 2,949 | 29 2 | 1,419 | 23 1 | 1,530 | 38 8 | 4 | 4 8 |
| 1114 | Plumbers' supplies | 6,910 | 30 1 | 7,995 | 29 8 | 6,456 | 32 1 | 7,192 | 33 7 | 24,219 | 32 0 | 8,115 | 25 5 | 16,104 | 36 8 | 10 | 4 0 |
| 1224 | Jewelers' findings and materials | 936 | 30 2 | 1,279 | 33 1 | 830 | 31 2 | 1,003 | 36 8 | 6,930 | 40 4 | 4,652 | 42 5 | 2,278 | 36 6 | 4 | 5 5 |
| 118 | Ice cream | 6,111 | 25 4 | 8,611 | 27 1 | 4,487 | 25 9 | 5,396 | 28 2 | 67,942 | 32 4 | 29,605 | 29 3 | 38,337 | 35 4 | 146 | 6 0 |
| 401 | Bags, paper, exclusive of those made in paper mills | 3,100 | 30 9 | 2,988 | 28 5 | 2,897 | 31 8 | 2,521 | 31 4 | 21,464 | 32 7 | 13,108 | 31 4 | 8,356 | 35 1 | 12 | 11 2 |
| 1212 | Nonferrous-metal alloys, etc., n. e. c. | 27,267 | 37 4 | 34,323 | 36 6 | 23,631 | 37 6 | 27,215 | 37 8 | 142,358 | 36 2 | 83,287 | 37 9 | 59,071 | 34 0 | 22 | 2 0 |
| 622 | Oil, cake, and meal, cottonseed | 5,151 | 32 8 | 3,236 | 30 5 | 4,474 | 33 8 | 1,975 | 33 4 | 60,565 | 32 2 | 51,281 | 31 9 | 9,284 | 33 9 | 105 | 22 9 |
| 1642 | Sporting and athletic goods, not including firearms and ammunition | 3,934 | 34 8 | 4,311 | 35 8 | 3,359 | 34 7 | 3,341 | 37 0 | 12,267 | 35 2 | 6,205 | 37 4 | 6,062 | 33 2 | 10 | 5 1 |
| 1623 | Lapidary work | 67 | 33 0 | 113 | 38 3 | 59 | 38 6 | 90 | 44 8 | 731 | 35 6 | 472 | 38 1 | 259 | 32 0 | 4 | 6 6 |
| 617 | Grease and tallow, not including lubricating greases | 1,772 | 31 0 | 2,249 | 29 2 | 1,416 | 29 8 | 1,582 | 29 3 | 11,424 | 28 7 | 5,827 | 26 2 | 5,597 | 31 7 | 18 | 6 9 |
| 1324 | Cranes, and dredging, excavating, and road-building machinery | 4,547 | 31 7 | 6,551 | 33 7 | 3,498 | 32 4 | 4,405 | 35 0 | 18,158 | 28 9 | 7,397 | 25 7 | 10,761 | 31 6 | 8 | 6 3 |

For footnotes, see end of table

*1935, based on value added by manufacture*— Continued

sands of dollars]

| Eight largest producer | | | | | | | | | | | | | | | | Industry | Industry number |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Persons employed | | Wages and salaries | | Wage earners | | Wages | | Value of product | | Cost of materials, etc | | Value added by manufacture | | Number of establishments | | | |
| Number | Percent of industry | Amount | Percent of industry | Number | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Number | Percent of industry | | |
| 109 SMALL INDUSTRIES—Continued | | | | | | | | | | | | | | | | | |
| 9,320 | 100.0 | 6,676 | 100.0 | 5,799 | 100.0 | 5,121 | 100.0 | 26,307 | 100.0 | 10,200 | 100.0 | 16,107 | 100.0 | 15 | 100.0 | Ammunition and related products | 602 |
| 4,790 | 90.7 | 6,797 | 91.1 | 4,178 | 91.4 | 3,251 | 93.0 | 37,845 | 96.1 | 17,807 | 94.0 | 22,038 | 93.1 | 45 | 58.1 | Explosives | 603 |
| 1,985 | 91.2 | 5,983 | 91.0 | 4,161 | 91.3 | 3,030 | 91.5 | 12,010 | 92.2 | 3,057 | 90.8 | 8,953 | 92.7 | 20 | 45.5 | Firearms | 1106 |
| 950 | 85.9 | 1,303 | 88.9 | 715 | 88.5 | 577 | 90.9 | 1,661 | 87.2 | 2,090 | 84.5 | 2,571 | 89.6 | 8 | 32.6 | Fire extinguishers, chemical | 1206 |
| 18,330 | 83.0 | 21,139 | 82.4 | 16,115 | 83.6 | 17,103 | 84.1 | 87,060 | 83.7 | 49,215 | 84.2 | 37,845 | 82.9 | 20 | 11.8 | Aluminum products | 1201 |
| 12,368 | 72.5 | 16,173 | 72.2 | 10,394 | 73.7 | 12,038 | 78.5 | 198,803 | 83.1 | 114,921 | 82.4 | 83,884 | 84.1 | 24 | 10.1 | Soap | 631 |
| 3,632 | 79.5 | 3,797 | 79.0 | 3,014 | 79.7 | 2,763 | 80.6 | 14,777 | 82.6 | 4,167 | 72.1 | 10,610 | 87.7 | 8 | 15.6 | Pens, fountain and stylographic, pen points gold, steel, brass | 1634 |
| 1,146 | 77.5 | 1,798 | 77.2 | 859 | 78.4 | 1,147 | 79.9 | 6,552 | 80.0 | 3,277 | 79.5 | 3,276 | 80.6 | 12 | 25.0 | Soda fountains and accessories | 1641 |
| 7,062 | 91.5 | 10,721 | 92.6 | 6,885 | 91.7 | 8,351 | 92.2 | 20,111 | 90.2 | 5,226 | 80.7 | 14,886 | 85.4 | 9 | 24.1 | Sewing machines and attachments | 1312 |
| 6,851 | 74.4 | 8,706 | 75.5 | 6,085 | 77.1 | 6,963 | 85.7 | 120,562 | 82.2 | 65,054 | 78.9 | 55,508 | 86.4 | 15 | 13.6 | Cereal preparations | 106 |
| 9,181 | 85.0 | 10,906 | 87.0 | 7,844 | 85.0 | 8,201 | 87.8 | 85,081 | 89.4 | 64,082 | 90.1 | 20,999 | 87.4 | 62 | 80.5 | Sugar, beet | 129 |
| 2,030 | 85.9 | 2,631 | 85.7 | 1,731 | 86.0 | 2,022 | 86.8 | 5,635 | 80.7 | 2,103 | 76.2 | 3,532 | 82.6 | 8 | 27.6 | Watchcases | 1292 |
| 2,167 | 61.9 | 2,689 | 63.9 | 1,829 | 62.0 | 1,979 | 67.4 | 13,377 | 77.7 | 6,168 | 80.1 | 7,209 | 77.7 | 10 | 13.2 | Card cutting and designing | 404 |
| 8,804 | 80.1 | 9,254 | 77.7 | 7,860 | 81.7 | 7,103 | 79.0 | 29,547 | 77.4 | 12,980 | 75.6 | 16,567 | 78.9 | 19 | 26.4 | Asbestos products other than steam packing, etc | 1001 |
| 3,719 | 67.0 | 4,205 | 65.7 | 3,348 | 67.3 | 3,295 | 67.5 | 23,254 | 78.2 | 8,309 | 76.0 | 14,945 | 79.5 | 20 | 41.7 | Salt | 630 |
| 7,653 | 79.1 | 10,193 | 81.6 | 6,982 | 79.0 | 8,386 | 81.3 | 76,821 | 82.2 | 36,114 | 82.9 | 20,707 | 81.0 | 15 | 57.7 | Smelting and refining, zinc | 1218 |
| 697 | 77.4 | 873 | 81.1 | 553 | 77.6 | 485 | 81.0 | 3,805 | 82.3 | 1,936 | 80.7 | 1,869 | 83.9 | 8 | 34.8 | Candles | 607 |
| 4,360 | 77.3 | 5,311 | 80.9 | 3,952 | 79.8 | 4,278 | 82.7 | 215,789 | 90.1 | 12,117 | 93.6 | 8,672 | 84.4 | 10 | 43.5 | Motorcycles, bicycles, and parts | 1409 |
| 8,007 | 73.0 | 7,665 | 73.4 | 7,112 | 73.6 | 5,929 | 77.7 | 114,197 | 84.3 | 76,276 | 84.8 | 37,921 | 83.3 | 16 | 13.9 | Tobacco (chewing and smoking) and snuff | 1647 |
| 2,958 | 65.9 | 3,815 | 67.0 | 2,402 | 68.3 | 2,512 | 69.2 | 15,307 | 67.3 | 5,237 | 57.1 | 10,230 | 73.8 | 11 | 12.6 | Dentists' equipment and supplies | 1611 |
| 2,756 | 63.9 | 2,515 | 66.9 | 2,120 | 63.6 | 1,875 | 69.6 | 10,652 | 66.7 | 4,644 | 58.6 | 6,008 | 71.7 | 12 | 20.0 | Wood distillation and charcoal manufacture | 633 |
| 3,186 | 74.9 | 4,083 | 72.9 | 2,737 | 77.0 | 3,218 | 76.6 | 25,872 | 77.4 | 17,819 | 76.9 | 8,053 | 72.3 | 11 | 33.3 | Artificial leather, oil cloth | 220 |
| 2,700 | 82.3 | 5,103 | 84.4 | 2,202 | 82.6 | 3,679 | 86.0 | 25,650 | 79.3 | 10,833 | 75.2 | 14,817 | 82.6 | 15 | 32.6 | Baking powder, yeast, and other leavening compounds | 603 |
| 7,922 | 77.1 | 10,103 | 80.6 | 6,795 | 77.7 | 8,127 | 82.5 | 49,729 | 79.7 | 29,567 | 79.9 | 20,159 | 79.3 | 11 | 26.8 | Washing machines, wringers, driers, ironing machines | 1315 |
| 2,051 | 62.7 | 2,735 | 63.2 | 1,501 | 60.9 | 1,659 | 63.0 | 9,758 | 72.9 | 2,578 | 68.1 | 7,180 | 74.8 | 9 | 16.1 | Scales and balances | 1311 |
| 304 | 58.8 | 480 | 63.9 | 293 | 59.6 | 242 | 55.3 | 1,708 | 64.6 | 602 | 57.9 | 1,106 | 68.7 | 8 | 18.6 | Hair work | 1617 |
| 903 | 19.8 | 1,355 | 20.2 | 623 | 21.5 | 538 | 20.3 | 36,629 | 54.0 | 12,610 | 43.2 | 24,019 | 62.1 | 16 | 3.9 | Flavoring extracts, syrups, and related products | 115 |
| 354 | 57.8 | 549 | 59.7 | 244 | 61.0 | 202 | 65.5 | 1,675 | 71.7 | 2,377 | 69.0 | 2,298 | 74.8 | 11 | 23.9 | Foundry supplies | 1614 |
| 1,047 | 46.2 | 1,378 | 46.8 | 867 | 49.0 | 985 | 54.3 | 24,240 | 58.1 | 10,276 | 56.2 | 13,964 | 62.3 | 17 | 16.0 | Oils not elsewhere classified | 625 |
| 6,808 | 57.7 | 8,995 | 61.3 | 6,242 | 58.1 | 7,459 | 63.2 | 47,853 | 64.8 | 26,860 | 64.0 | 20,993 | 65.9 | 13 | 27.1 | Wrought pipe, welded and heavy riveted | 1128 |
| 621 | 67.3 | 800 | 64.8 | 573 | 66.2 | 661 | 67.8 | 3,684 | 67.6 | 2,087 | 66.4 | 2,597 | 70.7 | 8 | 17.0 | Wool pulling | 1634 |
| 2,740 | 56.1 | 3,127 | 51.7 | 2,118 | 58.7 | 2,074 | 60.5 | 38,081 | 60.8 | 31,655 | 60.9 | 6,426 | 60.7 | 20 | 20.2 | Smelting and refining, nonferrous metals other than silver, gold, platinum | 1217 |
| 5,912 | 59.8 | 6,024 | 55.2 | 5,222 | 61.7 | 4,821 | 58.0 | 107,514 | 62.7 | 83,466 | 63.7 | 24,048 | 59.3 | 212 | 45.4 | Condensed and evaporated milk | 111 |
| 1,042 | 60.7 | 2,188 | 61.1 | 878 | 61.0 | 1,412 | 60.1 | 19,208 | 67.5 | 37,713 | 66.9 | 11,495 | 69.7 | 18 | 33.3 | Malt | 122 |
| 3,982 | 65.3 | 4,869 | 70.6 | 3,338 | 64.4 | 2,972 | 70.2 | 13,355 | 66.8 | 5,374 | 65.1 | 7,981 | 68.0 | 9 | 19.1 | Pencils, lead (including mechanical) and crayons | 1633 |
| 1,121 | 60.3 | 1,116 | 63.2 | 960 | 60.3 | 808 | 62.9 | 4,621 | 67.5 | 2,185 | 67.5 | 2,436 | 67.6 | 8 | 17.8 | Carriages, wagons, sleighs and sleds | 1401 |
| 1,830 | 51.4 | 2,418 | 57.2 | 1,424 | 49.7 | 1,605 | 56.3 | 4,945 | 54.6 | 1,612 | 48.1 | 3,333 | 57.4 | 8 | 8.6 | Musical instruments and parts and materials, n. e. c | 1628 |
| 3,775 | 65.6 | 4,300 | 60.9 | 3,281 | 68.7 | 3,215 | 67.8 | 14,908 | 61.8 | 7,472 | 63.6 | 7,726 | 60.2 | 14 | 11.3 | Steam and other packing, pipe and boiler covering, gaskets, n. e. c | 1644 |
| 4,993 | 67.8 | 5,787 | 66.6 | 4,544 | 70.1 | 4,768 | 71.3 | 51,929 | 68.2 | 20,992 | 69.8 | 21,937 | 66.1 | 29 | 26.9 | Roofing, built-up and roll, asphalt shingles, roof coatings | 1638 |
| 296 | 56.3 | 446 | 62.6 | 180 | 54.0 | 191 | 56.7 | 1,634 | 67.2 | 876 | 71.7 | 758 | 62.7 | 8 | 17.0 | Artists' materials | 1603 |
| 4,678 | 55.6 | 2,640 | 51.4 | 4,567 | 56.7 | 2,466 | 54.9 | 10,645 | 56.0 | 5,796 | 56.4 | 4,849 | 55.7 | 27 | 23.5 | Gloves and mittens, cloth or cloth and leather combined | 2171 |
| 7,904 | 54.8 | 7,041 | 55.5 | 7,420 | 54.8 | 5,758 | 55.3 | 23,859 | 63.0 | 9,291 | 62.8 | 14,568 | 63.1 | 21 | 29.6 | Cast iron pipe and fittings | 1102 |
| 1,847 | 55.2 | 3,153 | 51.5 | 1,880 | 58.2 | 1,896 | 58.6 | 21,033 | 60.9 | 12,376 | 66.5 | 8,657 | 54.4 | 19 | 25.7 | Ink, printing | 618 |
| 1,005 | 73.0 | 1,007 | 69.1 | 925 | 70.0 | 747 | 72.6 | 2,157 | 67.7 | 811 | 66.3 | 1,346 | 68.6 | 8 | 23.6 | Musical instrument parts and materials: piano and organ | 1627 |
| 2,387 | 61.1 | 3,064 | 59.0 | 2,103 | 61.6 | 2,332 | 66.0 | 16,397 | 58.2 | 8,127 | 53.9 | 8,270 | 63.2 | 19 | 25.7 | Glue and gelatin | 616 |
| 841 | 59.4 | 1,055 | 55.9 | 748 | 62.3 | 602 | 54.5 | 2,820 | 54.3 | 1,019 | 50.9 | 1,801 | 56.1 | 8 | 12.3 | Galvanizing and other coating | 1108 |
| 872 | 40.0 | 1,178 | 36.1 | 691 | 46.1 | 632 | 43.1 | 9,015 | 50.3 | 4,173 | 49.8 | 4,842 | 50.7 | 9 | 5.4 | Blacking, stains, and dressings | 604 |
| 995 | 50.9 | 1,747 | 58.0 | 711 | 49.9 | 852 | 52.3 | 7,892 | 53.7 | 3,600 | 48.0 | 4,292 | 59.7 | 8 | 14.2 | Carbon paper and inked ribbons | 1607 |
| 3,013 | 62.3 | 3,197 | 58.5 | 2,630 | 63.1 | 2,774 | 61.4 | 11,571 | 58.9 | 5,986 | 60.5 | 5,585 | 57.2 | 12 | 36.0 | Wall paper | 411 |
| 1,390 | 47.8 | 1,534 | 48.2 | 1,216 | 51.5 | 1,176 | 46.7 | 11,483 | 53.4 | 6,135 | 53.1 | 5,348 | 53.6 | 10 | 5.4 | Belting and packing, leather | 901 |
| 197 | 41.4 | 338 | 45.6 | 115 | 43.1 | 137 | 47.4 | 1,963 | 54.0 | 827 | 50.2 | 1,136 | 57.2 | 8 | 12.0 | Mucilage, paste, and other adhesives, except glue and rubber cement | 621 |
| 1,375 | 51.7 | 1,456 | 47.7 | 1,183 | 54.3 | 968 | 49.2 | 7,418 | 59.2 | 2,823 | 56.3 | 4,595 | 61.2 | 8 | 9.8 | Beauty-shop equipment, except furniture | 1653 |
| 4,475 | 28.9 | 5,103 | 28.6 | 4,022 | 29.3 | 3,802 | 28.1 | 23,121 | 45.2 | 4,394 | 34.9 | 18,727 | 48.5 | 10 | 3.8 | Cutlery (not including silver and plated cutlery) and edge tools | 1103 |
| 13,819 | 68.1 | 14,794 | 65.5 | 12,464 | 69.1 | 12,201 | 67.2 | 36,141 | 59.1 | 13,679 | 60.7 | 22,462 | 58.1 | 12 | 15.8 | Clocks, watches, etc., and materials and parts except watchcases | 1202 |
| 1,252 | 51.5 | 1,178 | 52.0 | 1,151 | 52.7 | 888 | 51.9 | 4,277 | 42.4 | 2,158 | 35.1 | 2,119 | 53.7 | 8 | 9.6 | Umbrellas, parasols, and canes | 1649 |
| 9,871 | 43.0 | 11,217 | 41.8 | 8,894 | 44.2 | 9,600 | 45.0 | 34,144 | 45.1 | 13,462 | 42.0 | 20,782 | 47.5 | 16 | 6.4 | Plumbers' supplies | 1114 |
| 1,566 | 50.5 | 1,962 | 50.8 | 1,389 | 52.2 | 1,504 | 55.1 | 8,920 | 52.0 | 5,653 | 51.6 | 3,267 | 52.5 | 8 | 11.0 | Jewelers' findings and materials | 1224 |
| 7,113 | 29.6 | 9,957 | 31.4 | 5,262 | 30.4 | 6,252 | 32.7 | 79,071 | 37.7 | 35,045 | 34.6 | 44,026 | 40.6 | 181 | 7.4 | Ice cream | 118 |
| 4,302 | 43.8 | 4,161 | 39.7 | 4,129 | 45.3 | 3,516 | 43.7 | 31,944 | 48.7 | 20,586 | 48.9 | 11,358 | 48.7 | 21 | 22.4 | Bags, paper, exclusive of those made in paper mills | 101 |
| 35,153 | 48.2 | 43,753 | 46.6 | 30,413 | 48.4 | 34,653 | 48.1 | 206,019 | 52.4 | 125,194 | 57.1 | 80,525 | 46.4 | 63 | 5.7 | Nonferrous-metal alloys, etc., n. e. c | 1212 |
| 6,522 | 41.6 | 4,280 | 40.3 | 5,621 | 42.5 | 2,543 | 43.0 | 81,750 | 43.5 | 69,907 | 43.5 | 11,843 | 43.3 | 143 | 31.2 | Oil, cake, and meal, cottonseed | 622 |
| 5,085 | 45.0 | 5,301 | 44.9 | 4,302 | 45.5 | 4,211 | 46.7 | 16,439 | 47.2 | 7,921 | 47.8 | 8,518 | 46.9 | 15 | 7.7 | Sporting and athletic goods, not including firearms and ammunition | 1642 |
| 77 | 37.9 | 133 | 45.1 | 65 | 42.5 | 99 | 49.3 | 927 | 45.2 | 546 | 44.1 | 381 | 47.0 | 8 | 13.2 | Lapidary work | 1623 |
| 2,208 | 38.6 | 2,926 | 38.6 | 1,788 | 37.6 | 2,066 | 38.3 | 14,965 | 37.4 | 7,867 | 35.4 | 7,098 | 39.9 | 26 | 10.0 | Grease and tallow, not including lubricating greases | 617 |
| 6,983 | 48.7 | 9,621 | 49.5 | 5,418 | 50.1 | 6,658 | 53.0 | 27,043 | 44.5 | 12,235 | 42.5 | 15,708 | 46.1 | 12 | 9.4 | Cranes, and dredging, excavating, and road-building machinery | 1324 |

TABLE III.—*Concentration in manufacturing industries,*

[Values in thous

| Industry number | Industry | Largest four producers | | | | | | | | | | | | | | Number of establishments | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Persons employed | | Wages and salaries | | Wage earners | | Wages | | Value of product | | Cost of materials, etc.[1] | | Value added by manufacture[2] | | | |
| | | Number | Percent of industry | Amount | Percent of industry | Number | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Number | Percent of industry |
| | | 100 SMALL INDUSTRIES—Continued | | | | | | | | | | | | | | | |
| 1651 | Window shades (textile and paper) and fixtures. | 1,066 | 28.9 | 1,155 | 28.1 | 916 | 30.5 | 745 | 27.5 | 5,793 | 28.5 | 3,378 | 27.7 | 2,415 | 29.8 | 5 | 1.6 |
| 1616 | Furs, dressed and dyed | 2,379 | 33.9 | 3,130 | 32.6 | 2,283 | 35.5 | 2,622 | 34.7 | 5,810 | 27.2 | 1,385 | 21.3 | 4,425 | 29.8 | 7 | 4.2 |
| 609 | Cleaning and polishing preparations | 780 | 17.6 | 1,347 | 19.9 | 410 | 14.5 | 547 | 18.1 | 11,085 | 26.1 | 3,620 | 21.0 | 7,465 | 29.7 | 4 | 1.0 |
| 1620 | Instruments and apparatus, professional, scientific, commercial, and industrial | 5,432 | 27.1 | 7,806 | 28.0 | 4,069 | 26.8 | 4,906 | 27.9 | 18,613 | 27.2 | 4,926 | 24.0 | 13,687 | 28.6 | 5 | 1.8 |
| 1646 | Theatrical scenery and stage equipment | 82 | 20.8 | 212 | 30.5 | 60 | 21.5 | 136 | 31.1 | 580 | 29.9 | 245 | 32.7 | 335 | 28.2 | 4 | 8.3 |
| 1613 | Feathers, plumes, and manufactures thereof | 134 | 19.9 | 154 | 25.2 | 115 | 20.2 | 99 | 23.4 | 576 | 35.0 | 293 | 48.0 | 283 | 27.3 | 4 | 5.5 |
| 614 | Fertilizers | 6,482 | 27.5 | 5,273 | 29.5 | 5,734 | 28.1 | 3,882 | 31.8 | 36,356 | 25.6 | 24,018 | 24.7 | 12,338 | 27.3 | 105 | 13.3 |
| 318 | Window and door screens and weather strip | 652 | 28.0 | 673 | 25.2 | 592 | 31.6 | 449 | 25.8 | 2,241 | 25.8 | 1,006 | 24.5 | 1,235 | 27.1 | 6 | 4.3 |
| 126 | Poultry dressing and packing, wholesale | 3,134 | 33.1 | 2,124 | 29.8 | 2,711 | 33.6 | 1,529 | 30.2 | 27,707 | 29.8 | 23,344 | 30.5 | 4,363 | 26.8 | 155 | 27.6 |
| 628 | Perfumes, cosmetics, and other toilet preparations | 1,602 | 12.2 | 1,865 | 11.6 | 1,260 | 13.0 | 1,231 | 14.4 | 29,128 | 24.4 | 9,257 | 20.8 | 19,871 | 26.5 | 5 | .9 |
| 2172 | Handkerchiefs | 1,629 | 31.0 | 1,264 | 30.8 | 1,545 | 31.6 | 1,034 | 32.2 | 5,587 | 30.3 | 3,218 | 33.9 | 2,369 | 26.5 | 5 | 5.6 |
| 315 | Synthetic-resin, cellulose-plastic, etc., n. e. c. | 3,245 | 22.6 | 3,705 | 24.0 | 2,919 | 22.9 | 3,133 | 25.9 | 13,173 | 26.2 | 5,590 | 26.3 | 7,583 | 26.1 | 12 | 7.8 |
| 902 | Boot and shoe cut stock and findings | 4,965 | 24.5 | 5,152 | 24.2 | 4,657 | 25.5 | 4,618 | 27.5 | 33,518 | 30.0 | 24,270 | 31.9 | 9,248 | 26.1 | 24 | 4.8 |
| 1207 | Lighting equipment | 3,425 | 17.0 | 4,573 | 18.8 | 2,963 | 17.8 | 3,621 | 21.0 | 19,808 | 23.1 | 8,108 | 20.3 | 11,700 | 25.5 | 4 | .8 |
| 107 | Cheese | 1,174 | 23.2 | 1,247 | 25.5 | 963 | 22.2 | 918 | 23.3 | 17,897 | 18.1 | 14,171 | 16.8 | 3,726 | 25.2 | 143 | 5.5 |
| 114 | Feeds, prepared, for animals and fowls | 2,286 | 14.8 | 2,656 | 14.4 | 1,703 | 14.7 | 1,649 | 14.9 | 55,375 | 19.2 | 40,917 | 17.7 | 14,458 | 24.9 | 47 | 5.0 |
| 1321 | Boiler shops | 3,024 | 18.0 | 4,438 | 20.2 | 2,169 | 16.3 | 2,761 | 18.7 | 15,991 | 21.9 | 6,711 | 18.7 | 9,280 | 24.9 | 7 | 1.7 |
| 704 | Lubricating greases, not made in petroleum refineries | 742 | 23.1 | 1,047 | 21.1 | 459 | 23.7 | 519 | 22.7 | 9,261 | 25.7 | 5,463 | 26.3 | 3,798 | 24.8 | 6 | 3.3 |
| 909 | Saddlery, harness, and whips | 930 | 24.6 | 952 | 24.6 | 858 | 26.5 | 768 | 26.3 | 3,427 | 25.7 | 2,081 | 26.9 | 1,346 | 23.9 | 4 | 2.5 |
| 1125 | Tools, not including edge tools, machine tools, files, or saws | 3,369 | 22.4 | 3,683 | 20.0 | 2,878 | 22.8 | 2,747 | 20.7 | 12,327 | 23.5 | 4,371 | 23.4 | 7,956 | 23.5 | 13 | 3.8 |
| 1601 | Artificial and preserved flowers and plants | 877 | 24.4 | 854 | 25.7 | 829 | 25.8 | 778 | 29.8 | 1,817 | 20.2 | 489 | 14.8 | 1,328 | 23.3 | 4 | 2.1 |
| 906 | Leather goods not elsewhere classified | 1,048 | 14.8 | 1,168 | 15.6 | 876 | 14.6 | 847 | 15.6 | 4,754 | 18.0 | 1,919 | 14.5 | 2,835 | 21.6 | 4 | 1.0 |
| 1107 | Forgings, iron and steel | 2,328 | 16.8 | 10,278 | 53.3 | 2,043 | 16.7 | 9,507 | 63.5 | 13,549 | 20.4 | 6,810 | 19.6 | 6,739 | 21.3 | 13 | 7.0 |
| 117 | Food preparations not elsewhere classified | 2,772 | 16.0 | 2,781 | 14.4 | 2,378 | 16.8 | 1,943 | 16.0 | 50,980 | 22.9 | 37,557 | 23.7 | 13,423 | 20.9 | 27 | 2.6 |
| 627 | Insecticides and fungicides, etc., n. e. c. | 311 | 5.7 | 445 | 5.6 | 230 | 6.6 | 276 | 8.2 | 8,704 | 16.3 | 2,769 | 11.3 | 5,935 | 20.4 | 4 | .7 |
| 1117 | Screw-machine products and wood screws | 3,610 | 20.9 | 4,637 | 21.0 | 3,105 | 20.7 | 3,676 | 21.9 | 13,797 | 21.9 | 6,635 | 25.0 | 7,162 | 19.6 | 6 | 2.0 |
| 1604 | Brooms | 813 | 17.9 | 648 | 17.3 | 773 | 18.6 | 539 | 17.6 | 2,271 | 15.9 | 935 | 12.5 | 1,336 | 19.5 | 4 | 1.1 |
| 1015 | Minerals and earths, ground or otherwise treated | 732 | 14.8 | 848 | 16.0 | 620 | 14.6 | 605 | 16.7 | 3,744 | 17.4 | 1,365 | 15.7 | 2,379 | 18.5 | 11 | 6.8 |
| 910 | Trunks, suitcases, and bags | 1,371 | 17.9 | 1,260 | 15.2 | 1,263 | 19.0 | 998 | 15.8 | 4,688 | 16.6 | 2,330 | 15.6 | 2,358 | 17.7 | 6 | 2.0 |
| 1618 | Hand stamps and stencils and brands | 616 | 19.8 | 721 | 17.4 | 496 | 22.0 | 491 | 19.4 | 1,681 | 18.0 | 560 | 21.1 | 1,121 | 16.8 | 8 | 2.9 |
| 1606 | Buttons | 1,248 | 11.0 | 1,422 | 13.5 | 1,119 | 10.8 | 1,112 | 13.6 | 4,166 | 14.9 | 1,409 | 12.7 | 2,757 | 16.3 | 6 | 2.0 |
| 211 | Waste and related products | 1,284 | 12.1 | 1,263 | 11.6 | 1,144 | 12.4 | 866 | 11.8 | 9,378 | 14.2 | 5,518 | 13.1 | 3,860 | 16.2 | 12 | 3.8 |
| 301 | Baskets and rattan and willow ware, not including furniture | 1,435 | 14.9 | 809 | 14.2 | 1,371 | 15.2 | 673 | 14.6 | 2,140 | 14.8 | 788 | 13.8 | 1,352 | 15.5 | 8 | 4.0 |
| 1204 | Sheet-metal work, not specifically classified | 2,362 | 10.8 | 2,990 | 10.4 | 1,946 | 11.2 | 2,270 | 11.6 | 19,018 | 17.4 | 11,568 | 20.0 | 7,450 | 14.4 | 5 | .4 |
| 1612 | Miscellaneous articles not elsewhere classified | 1,615 | 9.8 | 2,003 | 12.3 | 1,399 | 9.8 | 1,487 | 12.6 | 5,524 | 11.1 | 1,457 | 7.0 | 4,067 | 14.0 | 4 | .6 |
| 501 | Bookbinding and blank-book making | 2,674 | 11.0 | 3,615 | 12.0 | 2,291 | 11.2 | 2,692 | 12.3 | 9,797 | 13.4 | 2,928 | 13.9 | 6,869 | 13.1 | 8 | .8 |
| 1210 | Jewelry | 2,236 | 10.8 | 2,441 | 9.9 | 2,098 | 12.3 | 2,054 | 11.5 | 6,509 | 9.3 | 2,425 | 8.0 | 4,144 | 10.2 | 4 | .4 |
| 1640 | Signs and advertising novelties | 1,577 | 8.9 | 2,001 | 8.8 | 1,329 | 9.7 | 1,489 | 10.0 | 5,459 | 8.9 | 1,649 | 7.8 | 3,810 | 9.6 | 44 | 4.1 |
| 1005 | Concrete products | 612 | 5.8 | 785 | 6.4 | 493 | 5.9 | 545 | 7.0 | 4,197 | 9.4 | 1,905 | 9.5 | 2,292 | 9.2 | 37 | 3.0 |
| 908 | Pocketbooks, purses, and cardcases | 780 | 6.2 | 655 | 5.6 | 740 | 6.4 | 582 | 6.3 | 3,477 | 8.1 | 1,606 | 7.2 | 1,871 | 9.0 | 4 | 1.3 |
| 218 | Housefurnishings | 1,267 | 7.6 | 1,134 | 7.4 | 1,125 | 7.8 | 912 | 8.4 | 5,869 | 6.7 | 3,214 | 5.8 | 2,655 | 8.4 | 7 | .9 |
| 214 | Furnishing goods, men's | 1,375 | 5.6 | 1,077 | 5.0 | 1,305 | 5.7 | 920 | 5.4 | 6,949 | 7.7 | 3,796 | 7.9 | 3,153 | 7.6 | 4 | .5 |
| 1615 | Fur goods | 279 | 1.7 | 614 | 2.1 | 237 | 1.9 | 473 | 2.3 | 3,647 | 2.6 | 2,549 | 2.9 | 1,148 | 2.1 | 4 | .2 |
| | | INDUSTRIES FOR WHICH NO CONCENTRATION DATA ARE SHOWN[3] | | | | | | | | | | | | | | | |
| 302 | Billiard and pool tables, bowling alleys, etc | 364 | | 385 | | 314 | | 290 | | 3,145 | | 1,056 | | 2,089 | | 17 | |
| 702 | Fuel briquettes | 415 | | 533 | | 341 | | 386 | | 4,913 | | 3,394 | | 1,519 | | 25 | |
| 1406 | Locomotives, other than electric | 4,734 | | 5,935 | | 3,790 | | 3,972 | | 17,383 | | 9,493 | | 7,890 | | 14 | |
| 1215 | Smelting and refining, copper | 14,879 | | 14,023 | | 10,449 | | 11,154 | | 348,257 | | 310,797 | | 37,460 | | 20 | |
| 1216 | Smelting and refining, lead | 3,719 | | 4,595 | | 3,187 | | 3,424 | | 137,219 | | 121,997 | | 15,223 | | 16 | |
| 1220 | Tin and other foils, not including gold foil | 2,138 | | 2,429 | | 1,881 | | 1,899 | | 14,533 | | 9,226 | | 5,307 | | 11 | |

[*] Large industries, those employing more than 100,000 persons; medium industries, those employing 25,000 to 100,000 persons; small industries, those employing less than 25,000 persons.

[1] Includes cost of materials, mill and shop supplies, containers, fuel, and purchased electric energy.

[2] Value of products less cost of materials, containers, fuel, and purchased electric energy.

[3] The data for the largest 4 enterprises are combined with those for the largest 8 enterprises in order to avoid approximate disclosures of individual data.

[4] The data for the "remainder" of the industry are included in the data for the largest 8 enterprises in order to avoid approximate disclosures of individual data.

[5] In order to avoid the approximate disclosure of data for individual enterprises, no information is given for the largest 4 and the largest 8 enterprises in these industries.

*1935, based on value added by manufacture*—Continued

ands of dollars]

| Eight largest producers | | | | | | | | | | | | | | Industry | Industry number |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Persons employed | | Wages and salaries | | Wage earners | | Wages | | Value of product | | Cost of materials, etc | | Value added by manufacture | | Number of establishments | | | |
| Number | Percent of industry | Amount | Percent of industry | Number | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Amount | Percent of industry | Number | Percent of industry | | |
| 100 SMALL INDUSTRIES—Continued | | | | | | | | | | | | | | | | | |
| 1,618 | 43.8 | 1,806 | 44.0 | 1,407 | 46.9 | 1,247 | 46.0 | 9,403 | 46.3 | 5,932 | 48.6 | 3,471 | 42.8 | 25 | 7.8 | Window shades (textile and paper) and fixtures. | 1651 |
| 2,999 | 42.7 | 3,979 | 41.2 | 2,862 | 44.5 | 3,308 | 45.8 | 8,138 | 38.1 | 2,156 | 33.1 | 5,982 | 40.3 | 16 | 9.6 | Furs, dressed and dyed | 1616 |
| 1,219 | 27.5 | 2,196 | 30.9 | 737 | 29.8 | 962 | 32.4 | 16,839 | 39.7 | 6,064 | 35.1 | 10,775 | 42.9 | 8 | 2.0 | Cleaning and polishing preparations | 609 |
| 8,356 | 41.7 | 11,414 | 40.8 | 6,506 | 42.8 | 7,534 | 42.9 | 29,383 | 43.0 | 9,156 | 44.6 | 20,227 | 42.3 | 16 | 5.7 | Instruments and apparatus, professional, scientific, commercial, and industrial. | 1620 |
| 145 | 36.8 | 333 | 48.0 | 101 | 36.2 | 204 | 46.7 | 874 | 45.1 | 356 | 47.5 | 518 | 43.6 | 8 | 16.6 | Theatrical scenery and stage equipment | 1646 |
| 242 | 35.9 | 558 | 42.2 | 208 | 36.5 | 367 | 39.5 | 776 | 47.2 | 359 | 58.8 | 417 | 30.3 | 8 | 11.0 | Feathers, plumes, and manufactures thereof | 1613 |
| 9,326 | 45.1 | 7,593 | 42.8 | 8,292 | 47.5 | 5,363 | 48.9 | 58,356 | 41.6 | 39,760 | 42.6 | 18,596 | 39.5 | 168 | 25.1 | Fertilizers | 614 |
| 918 | 39.1 | 994 | 37.2 | 789 | 42.1 | 634 | 36.4 | 3,556 | 41.0 | 1,653 | 40.3 | 1,903 | 41.7 | 10 | 7.1 | Window and door screens and weather strip | 318 |
| 4,108 | 42.3 | 2,710 | 8.4 | 3,467 | 42.9 | 1,991 | 39.3 | 36,246 | 39.0 | 30,736 | 40.1 | 5,510 | 33.8 | 193 | 34.3 | Poultry dressing and packing, wholesale | 126 |
| 3,344 | 25.5 | 3,776 | 28.3 | 2,940 | 27.3 | 2,460 | 28.7 | 48,655 | 40.7 | 15,499 | 34.8 | 33,156 | 44.2 | 10 | 1.8 | Perfumes, cosmetics, and other toilet preparations. | 628 |
| 2,505 | 47.6 | 2,041 | 49.7 | 2,353 | 48.1 | 1,629 | 50.7 | 8,771 | 47.6 | 5,062 | 53.5 | 3,709 | 41.5 | 9 | 10.1 | Handkerchiefs | 2172 |
| 5,251 | 36.6 | 5,963 | 38.6 | 4,089 | 36.8 | 4,845 | 40.1 | 22,326 | 44.4 | 10,011 | 47.1 | 12,315 | 42.4 | 20 | 13.1 | Synthetic-resin, cellulose-plastic, etc., n. e. c. | 315 |
| 5,821 | 28.7 | 6,225 | 29.3 | 5,434 | 29.7 | 5,180 | 32.7 | 46,846 | 42.0 | 35,911 | 47.2 | 10,935 | 30.8 | 32 | 6.4 | Boot and shoe cut stock and findings | 902 |
| 5,290 | 26.3 | 7,025 | 28.9 | 4,652 | 27.9 | 5,570 | 32.3 | 29,831 | 34.8 | 13,750 | 34.5 | 16,081 | 35.1 | 8 | 1.6 | Lighting equipment | 1207 |
| 1,426 | 28.2 | 1,700 | 30.7 | 1,177 | 27.1 | 1,123 | 28.5 | 22,245 | 22.5 | 17,829 | 21.2 | 4,416 | 29.8 | 180 | 7.3 | Cheese | 107 |
| 3,371 | 21.8 | 4,194 | 22.8 | 2,562 | 22.1 | 2,689 | 24.3 | 99,058 | 34.3 | 79,453 | 34.1 | 19,605 | 33.8 | 62 | 6.6 | Feeds, prepared, for animals and fowls | 114 |
| 1,638 | 27.6 | 6,451 | 29.0 | 3,575 | 26.9 | 4,228 | 28.6 | 23,914 | 32.7 | 11,816 | 32.9 | 12,098 | 32.5 | 14 | 3.4 | Boiler shops | 1321 |
| 1,072 | 53.3 | 1,369 | 29.6 | 725 | 37.5 | 834 | 36.5 | 14,472 | 40.1 | 9,166 | 44.1 | 5,306 | 34.6 | 13 | 7.2 | Lubricating greases, not made in petroleum refineries. | 704 |
| 1,340 | 35.5 | 1,465 | 35.2 | 1,269 | 37.4 | 1,096 | 37.5 | 5,043 | 37.8 | 3,114 | 40.3 | 1,929 | 31.3 | 8 | 5.0 | Saddlery, harness, and whips | 909 |
| 5,131 | 34.1 | 5,827 | 33.7 | 4,428 | 35.1 | 4,483 | 33.8 | 18,981 | 36.2 | 6,878 | 36.8 | 12,103 | 35.8 | 17 | 5.0 | Tools, not including edge tools, machine tools, files, or saws. | 1125 |
| 1,125 | 31.3 | 1,136 | 31.2 | 1,043 | 32.5 | 958 | 36.7 | 3,166 | 35.2 | 1,315 | 39.8 | 1,851 | 32.5 | 9 | 4.7 | Artificial and preserved flowers and plants | 1601 |
| 1,566 | 22.1 | 1,665 | 22.7 | 1,341 | 22.3 | 1,260 | 23.2 | 6,997 | 26.5 | 3,238 | 24.1 | 3,759 | 28.7 | 8 | 2.0 | Leather goods not elsewhere classified | 906 |
| 4,088 | 29.5 | 12,775 | 66.2 | 3,641 | 29.7 | 11,608 | 76.8 | 21,531 | 32.4 | 11,251 | 32.1 | 10,280 | 32.5 | 19 | 10.3 | Forgings, iron and steel | 1107 |
| 1,783 | 27.6 | 1,750 | 23.6 | 1,249 | 30.1 | 3,646 | 30.1 | 97,543 | 13.8 | 80,391 | 50.7 | 17,152 | 26.7 | 186 | 18.1 | Food preparations not elsewhere classified | 117 |
| 711 | 13.0 | 1,004 | 12.6 | 531 | 15.3 | 512 | 15.1 | 12,962 | 21.3 | 4,342 | 17.8 | 8,620 | 29.6 | 8 | 1.4 | Insecticides and fungicides, etc., n. e. c. | 627 |
| 6,083 | 35.2 | 7,277 | 33.0 | 5,286 | 35.2 | 5,752 | 34.2 | 20,725 | 32.9 | 9,854 | 37.1 | 10,871 | 29.8 | 12 | 4.0 | Screw-machine products and wood screws | 1117 |
| 1,074 | 23.6 | 925 | 24.7 | 1,010 | 24.3 | 758 | 24.7 | 3,263 | 22.8 | 1,370 | 18.3 | 1,893 | 27.6 | 9 | 2.6 | Brooms | 1604 |
| 1,398 | 28.2 | 1,544 | 29.2 | 1,205 | 28.3 | 1,075 | 29.7 | 6,170 | 28.6 | 2,056 | 23.7 | 4,114 | 32.0 | 15 | 9.3 | Minerals and earths, ground or otherwise treated. | 1015 |
| 2,066 | 27.0 | 2,109 | 25.5 | 1,907 | 28.7 | 1,692 | 26.7 | 7,451 | 26.4 | 3,824 | 25.6 | 3,627 | 27.2 | 10 | 3.3 | Trunks, suitcases, and bags | 910 |
| 929 | 29.8 | 1,132 | 27.3 | 747 | 33.1 | 783 | 30.9 | 2,696 | 28.9 | 882 | 33.2 | 1,814 | 27.2 | 15 | 5.4 | Hand stamps and stencils and brands. | 1618 |
| 2,942 | 25.9 | 2,852 | 27.1 | 2,700 | 26.2 | 2,302 | 28.2 | 7,579 | 27.0 | 2,937 | 26.5 | 4,642 | 27.4 | 15 | 5.1 | Buttons | 1606 |
| 1,879 | 17.2 | 1,988 | 18.2 | 1,679 | 18.2 | 1,331 | 18.1 | 15,934 | 24.1 | 10,680 | 25.3 | 5,254 | 22.1 | 16 | 5.1 | Waste and related products | 211 |
| 2,336 | 24.3 | 1,158 | 25.6 | 2,219 | 24.6 | 1,176 | 25.5 | 3,710 | 25.6 | 1,461 | 25.5 | 2,249 | 25.7 | 11 | 6.9 | Baskets and rattan and willow ware, not including furniture. | 301 |
| 3,184 | 14.6 | 3,148 | 14.4 | 2,711 | 14.5 | 2,810 | 14.4 | 28,905 | 26.4 | 28,408 | 31.9 | 10,497 | 20.4 | 39 | 2.8 | Sheet-metal work, not specifically classified | 1204 |
| 2,782 | 16.9 | 3,079 | 18.9 | 2,472 | 17.4 | 2,359 | 19.9 | 9,268 | 18.7 | 3,675 | 17.8 | 5,593 | 19.3 | 10 | 1.5 | Miscellaneous articles not elsewhere classified. | 1612 |
| 4,124 | 17.0 | 5,112 | 17.9 | 3,408 | 16.7 | 3,802 | 17.7 | 15,111 | 20.6 | 4,874 | 23.1 | 10,237 | 19.6 | 14 | 1.4 | Bookbinding and blank-book making | 501 |
| 3,291 | 15.9 | 3,710 | 15.0 | 2,972 | 17.4 | 3,016 | 16.9 | 10,945 | 15.4 | 4,410 | 14.6 | 6,535 | 16.1 | 8 | .8 | Jewelry | 1210 |
| 2,735 | 15.1 | 3,352 | 14.8 | 2,270 | 16.6 | 2,403 | 16.5 | 9,035 | 14.7 | 3,122 | 14.7 | 5,913 | 14.8 | 51 | 4.8 | Signs and advertising novelties | 1630 |
| 962 | 9.1 | 1,313 | 10.8 | 804 | 9.6 | 894 | 11.4 | 6,782 | 15.1 | 3,330 | 16.6 | 3,452 | 13.9 | 45 | 3.7 | Concrete products | 1005 |
| 1,732 | 13.8 | 1,615 | 13.9 | 1,591 | 13.9 | 1,291 | 14.0 | 6,795 | 15.8 | 3,579 | 16.1 | 3,216 | 15.5 | 9 | 2.8 | Pocketbooks, purses, and cardcases | 908 |
| 2,065 | 12.4 | 1,780 | 11.6 | 1,876 | 13.0 | 1,412 | 13.3 | 9,931 | 11.4 | 5,737 | 10.4 | 4,194 | 13.2 | 13 | 1.7 | Housefurnishings | 218 |
| 2,309 | 9.6 | 1,996 | 9.2 | 2,248 | 9.9 | 1,697 | 9.9 | 11,151 | 12.4 | 5,854 | 12.2 | 5,297 | 12.7 | 8 | 1.0 | Furnishing goods, men's | 214 |
| 493 | 3.0 | 1,012 | 3.5 | 141 | 3.4 | 816 | 3.9 | 6,411 | 4.5 | 4,535 | 7.1 | 1,879 | 3.4 | 8 | .4 | Fur goods | 1615 |

# APPENDIX 8.—SUMMARY OF CONCENTRATION DATA, CLASSIFICATION, AND PRICE DATA FOR MANUFACTURING INDUSTRIES, 1935[1]

The following table indicates the classifications to which the manufacturing industries have been assigned and the data used in analyses of prices and degree of concentration.

Under the column "Size code" the letters L, M, and S indicate large industries (L) employing 100,000 or more persons, medium industries (M) employing between 25,000 and 100,000 persons, and small industries (S) employing less than 25,000 persons.

The next column indicates the durability of the products of each industry. The basis for classification is that used in the report of the National Bureau of Economic Research *Commodity Flow and Capital Formation*. Nondurable or perishable products are those that, without marked change and retaining their essential physical identity, are ordinarily employed in their ultimate use less than 6 months. Semidurable products are those that, without marked change and retaining their essential physical identity are ordinarily employed in their ultimate use from 6 months to 3 years. Durable products are those that normally render successive services and are ordinarily employed in their ultimate use over a period longer than 3 years.

The next column classifies industries into finished or semimanufactured categories. Products which move to the ultimate consumer with no further processing are classified as finished and those which are used as materials by other manufacturers are classified as semimanufactured.

The concentration index represents for each industry the proportion of the total value of product for the industry contributed by the largest four producers.

The value added ratios for 1929 and 1935 represent the ratio between value added by manufacture and value of product for the industry.

Under "Type of market," industries are classified into three groups: Those selling to a local market, those selling to a regional market, and those selling to a national market.

The column giving location determinant classifies industries into three groups: Those industries the location of which is largely determined by the location of the consumer, those which are situated close to the raw materials, and the remaining industries classified under "Other determinants."

Under "Type of industry" two categories are used: straight and mixed. Industries classified as straight are those in which each manufacturer as a rule engages in the production of all commodities covered by the industry classification. Industries in which the manufacturers confine themselves to the production of only part of the commodities included in the industry are classified as mixed.

The price ratios were computed from Bureau of Labor Statistics prices for 1929 and 1932. Prices of manufactured goods were assigned to the proper industry. Where more than one price item appeared for an industry, the Bureau of Labor Statistics weights were used for each item to derive a weighted average price for the industry.

Under reliability of price data notations of "Adequate," "Fair," and "Poor" are used to describe the adequacy of the price data insofar as they can be used to typify the prices of products of an entire Census industry.

[1] Appendix 8 was prepared by Grace W. Knott.

TABLE I — *Summary of data for manufacturing industries, 1935*

| Industry number | Name of industry | Size code | Classification by durable, semidurable, and nondurable | Classification by semimanufactured and finished | Concentration index | Value added ratio 1929 | Value added ratio 1935 | Average value added 1929–35 | Type of market | Location determinant | Type of industry | Price ratio 1929/39 | Reliability of price data in relation to Census classification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | FOOD AND KINDRED PRODUCTS | | | | | | | | | | | | |
| 101 | Beverages, nonalcoholic | S | Nondurable | Finished | 8.7 | 61.9 | 61.0 | 61.5 | Local | Consumer | Straight | 87.5 | Fair. |
| 102 | Bread and other bakery products | L | do | do | 18.2 | 51.7 | 45.8 | 48.8 | do | do | Mixed | 90.6 | Adequate. |
| 103 | Butter | S | do | do | 17.2 | 14.8 | 15.6 | 15.2 | National | Raw material | Straight | 46.9 | Do. |
| 104 | Canned and preserved fish, crabs, etc | S | do | do | 26.9 | 34.1 | 35.3 | 34.7 | do | do | Mixed | 62.6 | Do. |
| 105 | Canned and dried fruits and vegetables, etc. | L | do | do | 22.7 | 38.4 | 37.0 | 37.7 | do | do | Straight | 67.7 | Do. |
| 106 | Cereal preparations | S | do | do | 68.1 | 42.1 | 43.8 | 43.0 | do | Other | Mixed | 85.6 | Fair. |
| 107 | Cheese | S | do | do | 18.6 | 16.2 | 15.0 | 15.6 | do | Raw material | Straight | 52.7 | Adequate. |
| 108 | Chewing gum | S | do | do | 92.0 | 61.4 | 68.6 | 65.0 | do | Other | do | | |
| 109 | Chocolate and cocoa products | S | do | do | 67.8 | 33.4 | 28.6 | 31.0 | do | do | do | 72.6 | Poor. |
| 111 | Condensed and evaporated milk | S | do | do | 41.6 | 21.7 | 23.6 | 22.7 | do | Raw material | do | 63.7 | Fair. |
| 112 | Confectionery | M | do | do | 12.5 | 45.3 | 40.9 | 43.1 | do | Other | do | | |
| 113 | Corn syrup, corn sugar, corn oil and starch. | S | do | do | 79.2 | 37.2 | 32.2 | 34.7 | do | Raw material | do | 60.6 | Adequate. |
| 114 | Feeds prepared for animals and fowls | S | do | do | 23.0 | 18.6 | 20.1 | 19.4 | Regional | do | do | | |
| 115 | Flavoring extracts and flavoring syrups | S | do | do | 47.7 | 57.0 | 57.0 | 57.0 | National | Other | do | | |
| 116 | Flour and other grain-mill products | M | do | Semimanufactured | 29.4 | 18.1 | 16.1 | 17.1 | do | do | do | 53.8 | Do. |
| 117 | Food preparations, n. e. c | S | do | Finished | 33.7 | 43.9 | 28.8 | 36.4 | do | do | Mixed | | |
| 118 | Ice cream | S | do | do | 32.7 | 52.5 | 51.8 | 52.2 | Local | Consumer | Straight | | |
| 119 | Ice, manufactured | M | do | do | 20.7 | 81.1 | 78.2 | 79.7 | do | do | do | | |
| 120 | Shortenings | S | do | do | 64.0 | 10.0 | 16.4 | 13.2 | National | Other | do | 45.8 | Fair. |
| 121 | Macaroni, spaghetti, vermicelli, and noodles. | S | do | do | 16.1 | 41.9 | 33.2 | 37.6 | do | do | do | 65.1 | Adequate. |
| 122 | Malt | S | do | Semimanufactured | 44.6 | 19.8 | 24.9 | 22.4 | do | Raw material | do | | |
| 123 | Meat packing, wholesale | L | do | Finished | 55.6 | 13.1 | 14.1 | 13.8 | do | Other | do | 50.8 | Do. |
| 124 | Oleomargarine | S | do | do | 79.1 | 33.6 | 28.1 | 30.9 | do | do | do | 41.3 | Do. |
| 126 | Poultry killing, dressing, and packing, wholesale. | S | do | do | 30.5 | 17.9 | 17.5 | 17.7 | do | Raw material | do | 51.5 | Do. |
| 127 | Rice cleaning and polishing | S | do | do | 38.6 | 21.2 | 22.4 | 21.8 | do | do | do | 62.7 | Do. |
| 128 | Sausage, meat pudding, headcheese, etc. | S | do | do | 35.1 | 24.8 | 20.5 | 22.7 | do | Other | do | | |
| 129 | Sugar, beet | S | do | do | 68.8 | 31.6 | 25.2 | 29.9 | do | Raw material | do | | |
| 130 | Sugar, cane, not including products of refineries. | S | do | Semimanufactured | 33.5 | 33.3 | 30.4 | 31.9 | do | do | do | 76.7 | Poor. |
| 131 | Sugar refining, cane | S | do | Finished | 69.6 | 13.6 | 10.9 | 12.3 | do | do | do | 78.4 | Adequate. |
| 132 | Vinegar and cider | S | do | do | 40.4 | 42.4 | 44.1 | 43.3 | do | do | do | 66.1 | Do. |
| 133 | Liquors, distilled | S | do | do | 51.2 | (1) | 50.0 | | do | Other | do | | |
| 134 | Liquors, malt | M | do | do | 11.8 | (1) | 66.7 | | Regional | do | do | | |
| 135 | Liquors, vinous | S | do | do | 26.8 | 75.1 | 58.0 | 66.6 | National | Raw material | do | | |
| 136 | Liquors, rectified and blended | S | do | do | 42.2 | (1) | 42.8 | | do | Other | do | | |
| | TEXTILES AND THEIR PRODUCTS | | | | | | | | | | | | |
| 201 | Carpets and rugs | M | Durable | do | 51.1 | 69.9 | 51.1 | 60.5 | do | do | do | 75.0 | Do. |
| 202 | Cordage and twine; jute goods, linen goods. | S | Semidurable | do | 31.3 | 40.3 | 49.8 | 44.6 | do | do | Mixed | 58.1 | Fair. |
| 203 | Cotton manufactures | L | do | Semimanufactured | 8.4 | 41.1 | 39.2 | 40.2 | do | do | Straight | 57.8 | Adequate. |
| 204 | Dyeing and finishing cotton, rayon, and silk | M | do | do | 13.9 | 49.4 | 54.4 | 51.9 | do | do | do | | |
| 205 | Felt goods, except woven felts | S | do | do | 61.3 | 42.3 | 43.0 | 42.7 | do | do | do | | |
| 206 | Hats, felt and straw, except millinery | S | do | Finished | 23.7 | 46.1 | 47.7 | 46.9 | do | do | Mixed | | |
| 207 | Knit goods | L | do | do | 5.3 | 49.2 | 48.0 | 48.6 | do | do | do | 55.5 | Fair. |
| 208 | Lace goods | S | do | do | 38.2 | 65.4 | 60.2 | 62.8 | do | do | Straight | | |
| 209 | Rayon manufactures | M | do | Semimanufactured | 18.5 | (2) | (2) | | do | do | do | | |
| 210 | Silk manufactures | M | do | do | 11.5 | 43.6 | 46.3 | | do | do | do | | |
| 211 | Waste and related products | S | Nondurable | do | 14.9 | 28.8 | 36.0 | 32.4 | do | do | do | | |
| 212 | Wool and hair manufactures | L | Semidurable | do | 24.2 | 39.2 | 39.3 | 39.3 | do | do | do | 62.6 | Adequate. |
| 213 | Men's cotton garments | L | do | Finished | 7.5 | 50.6 | 38.7 | 44.7 | do | do | Mixed | 71.4 | Fair. |
| 214 | Furnishing goods, men's | S | do | do | 7.7 | 44.6 | 46.6 | 45.6 | do | do | do | | |
| 215 | Clothing, men's, youths', and boys' | L | do | do | 5.1 | 51.1 | 41.9 | 46.5 | do | do | Straight | 72.3 | Do. |
| 216 | Clothing, women's, misses', and children's. | L | do | do | 1.4 | 45.3 | 41.2 | 43.3 | do | do | Mixed | | |
| 2171 | Gloves and mittens, cloth or cloth and leather. | S | do | do | 43.9 | 35.1 | 45.4 | 40.3 | do | do | Straight | | |
| 2172 | Handkerchiefs | S | Nondurable | do | 31.8 | 44.7 | 39.2 | 41.9 | do | do | do | | |
| 2173 | Suspenders, garters, and other elastic woven products. | S | Semidurable | do | 54.8 | 41.2 | 41.5 | 41.3 | do | do | do | | |
| 218 | Housefurnishings | S | do | do | 7.7 | 40.0 | 37.9 | 38.9 | do | do | do | 60.8 | Do. |
| 219 | Fabricated textile products, n. e. c | S | do | do | 37.2 | 23.9 | 27.7 | 25.8 | do | do | Mixed | | |
| 220 | Artificial leather; oilcloth | S | do | do | 57.7 | 33.6 | 32.4 | 33.0 | do | do | do | 81.5 | Adequate. |
| 221 | Embroideries; trimmings, stamped art goods. | S | do | do | 9.8 | 61.1 | 53.2 | 57.1 | do | do | do | | |
| 222 | Asphalted-felt-base floor covering, linoleum. | S | Durable | do | 81.6 | 53.1 | 54.3 | 53.7 | do | do | Straight | 73.4 | Do. |
| | FOREST PRODUCTS | | | | | | | | | | | | |
| 301 | Baskets and rattan and willow ware | S | Semidurable | do | 15.1 | 61.4 | 60.4 | 60.9 | do | do | do | | |
| 302 | Billiard and pool tables, bowling alleys, etc. | S | Durable | do | (2) | 63.3 | 66.4 | 64.8 | do | do | do | | |
| 303 | Boxes, cigar, wooden and part wooden | S | Semidurable | do | 42.1 | 57.9 | 63.8 | 60.8 | do | do | do | 87.5 | Do. |
| 304 | Boxes, wooden, except cigar boxes | M | do | do | 13.9 | 45.1 | 49.3 | 47.2 | Regional | do | do | | |
| 305 | Caskets, coffins, burial cases and other mortician's goods. | S | Durable | do | 17.6 | 55.5 | 55.2 | 55.4 | National | do | Mixed | 97.0 | Do. |
| 306 | Cooperage | S | Semidurable | do | 25.9 | 36.0 | 35.6 | 35.8 | Regional | do | Straight | 74.2 | |
| 307 | Cork products | S | do | Semimanufactured | 76.9 | 45.3 | 49.8 | 47.5 | National | do | do | | |
| 308 | Excelsior | S | Nondurable | Finished | 67.0 | 51.3 | 57.8 | 54.5 | do | Raw material | do | | |
| 309 | Furniture, including store and office fixtures. | L | Durable | do | 5.6 | 55.0 | 52.1 | 53.5 | do | Other | Mixed | | |
| 310 | Lasts and related products | S | Semidurable | Semimanufactured | 51.2 | 69.9 | 73.6 | 71.7 | do | do | Straight | | |
| 311 | Lumber and timber products, n. e. c | L | Durable | do | 4.7 | 67.1 | 62.3 | 64.7 | do | Raw material | do | 61.3 | Fair. |
| 312 | Matches | S | Nondurable | Finished | 70.3 | 38.1 | 37.5 | 37.9 | do | Other | do | 120.3 | Adequate. |
| 313 | Mirror and picture frames | S | Durable | do | 17.0 | 66.0 | 57.7 | 61.8 | do | do | do | | |
| 314 | Planing-mill products | M | do | Semimanufactured | 4.6 | 46.5 | 44.6 | 45.5 | Regional | Raw material | do | 72.6 | Fair. |

For footnotes, see end of table.

TABLE I.—*Summary of data for manufacturing industries, 1935*—Continued

| Industry number | Name of industry | Size code | Classification by durable, semidurable, and nondurable | Classification by semimanufactured and finished | Concentration index | Value added ratio 1929 | Value added ratio 1935 | Average value added 1924–1935 | Type of market | Location determinant | Type of industry | Price ratio 1932/29 | Reliability of price data in relation to Census classification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | FOREST PRODUCTS—continued | | | | | | | | | | | | |
| 315 | Synthetic-resin, cellulose-plastic, etc | S | Semidurable | Finished | 27.6 | (1) | 57.8 | | National | Other | Mixed | | |
| 317 | Turpentine and rosin | M | Nondurable | Semimanufactured | (3) | 71.7 | 61.9 | 66.8 | do | Raw material | Straight | | |
| 318 | Window and door screens and weather strip | S | Durable | Finished | 26.9 | 57.0 | 52.7 | 54.8 | do | Other | do | | |
| 319 | Wood preserving | S | do | Semimanufactured | 50.5 | 22.6 | 25.6 | 24.1 | do | Raw material | do | | |
| 320 | Wood turned and shaped and other wooden goods | S | do | Finished | 23.6 | 59.2 | 56.4 | 57.8 | do | Other | Mixed | | |
| | PAPER AND ALLIED PRODUCTS | | | | | | | | | | | | |
| 401 | Bags, paper | S | Nondurable | do | 34.8 | 33.1 | 36.4 | 34.7 | do | do | Straight | | |
| 402 | Boxes, paper, n. e. c | M | do | do | 14.1 | 45.7 | 43.6 | 44.6 | do | do | do | | |
| 403 | Cardboard, not made in paper mills | S | do | Semimanufactured | 61.9 | 52.7 | 47.3 | 50.0 | do | do | do | | |
| 404 | Card cutting and designing | S | do | do | 66.1 | 52.7 | 55.3 | 54.0 | do | do | do | | |
| 405 | Envelopes | S | do | Finished | 33.6 | 51.2 | 52.4 | 51.8 | do | do | do | | |
| 407 | Paper | L | do | Semimanufactured | 14.7 | 40.6 | 39.7 | 40.1 | do | do | do | 84.4 | Adequate. |
| 408 | Paper goods, n. e. c | M | do | Finished | 14.2 | 45.1 | 43.9 | 44.5 | do | do | do | | |
| 410 | Pulp (wood and other fiber) | M | do | Semimanufactured | 22.7 | 37.7 | 42.5 | 40.1 | do | Raw material | do | 64.3 | Do. |
| 411 | Wall paper | S | do | Finished | 41.4 | 55.1 | 49.7 | 52.4 | do | Other | do | | |
| | PRINTING, PUBLISHING, AND ALLIED INDUSTRIES | | | | | | | | | | | | |
| 501 | Bookbinding and blankbook making | S | do | do | 13.7 | 70.1 | 71.2 | 70.7 | Local | Consumer | do | | |
| 503 | Engraving (other than steel, copperplate, and wood), chasing, etc | S | do | do | 62.2 | 76.4 | 64.8 | 70.6 | National | Other | do | | |
| 504 | Engraving, steel, copperplate, and wood, and plate printing | S | do | do | 33.9 | 74.8 | 77.2 | 76.0 | Local | Consumer | do | | |
| 506 | Lithographing | S | do | do | 14.2 | 67.8 | 62.7 | 65.3 | do | do | do | | |
| 507 | Photoengraving, not done in printing establishments | S | do | do | 13.3 | 85.8 | 83.5 | 84.7 | do | do | do | | |
| 508 | Printing and publishing, book, music, and job | L | do | do | 4.4 | 73.5 | 66.5 | 70.0 | National | Other | Mixed | | |
| 510 | Printing and publishing, newspaper and periodical | L | do | do | 20.3 | 77.5 | 74.6 | 76.1 | Local | Consumer | do | | |
| 512 | Stereotyping and electrotyping | S | do | do | 36.0 | 81.6 | 86.1 | 83.9 | do | do | Straight | | |
| | CHEMICALS AND ALLIED PRODUCTS | | | | | | | | | | | | |
| 602 | Ammunition and related products | S | do | do | 92.0 | 54.7 | 61.2 | 58.0 | National | Other | do | | |
| 603 | Baking powder, yeast, and other leavening compounds | S | do | do | 57.1 | 56.8 | 55.5 | 56.2 | do | do | do | 95.6 | Do. |
| 604 | Blacking, stains, and dressings | S | do | do | 39.2 | 66.2 | 53.2 | 59.7 | do | do | do | | |
| 605 | Bluing | S | do | do | 85.1 | 65.6 | 68.6 | 67.1 | do | do | do | | |
| 606 | Bone black, carbon black, and lamp black | S | do | Semimanufactured | 81.0 | 54.9 | 63.9 | 59.4 | do | Raw material | Mixed | 43.7 | Do. |
| 607 | Candles | S | do | Finished | 61.1 | 51.4 | 49.3 | 50.4 | do | Other | Straight | | |
| 608 | Chemicals, n. e. c | M | do | Semimanufactured | 37.1 | 50.7 | 50.7 | 50.7 | do | do | Mixed | 87.3 | Poor. |
| 609 | Cleaning and polishing preparations | S | do | Finished | 28.0 | 61.8 | 59.3 | 60.6 | do | do | do | | |
| 610 | Compressed and liquefied gases | S | do | do | 79.2 | 72.2 | 73.3 | 72.8 | Local | Consumer | Straight | | |
| 611 | Drugs and medicines | M | do | do | 23.4 | 64.9 | 71.4 | 68.2 | National | Other | Mixed | 89.2 | Do. |
| 612 | Drug grinding | S | do | Semimanufactured | 87.8 | 41.3 | 42.8 | 42.1 | do | do | Straight | | |
| 613 | Explosives | S | do | Finished | 82.0 | 56.2 | 58.2 | 57.2 | do | do | do | | |
| 614 | Fertilizers | S | do | do | 25.9 | 31.3 | 33.5 | 32.4 | Regional | do | Mixed | 72.2 | Fair. |
| 615 | Fireworks | S | do | do | 52.8 | 62.6 | 59.6 | 61.1 | National | do | Straight | | |
| 616 | Glue and gelatin | S | do | do | 37.3 | 41.5 | 46.5 | 44.0 | do | do | do | | |
| 617 | Grease and tallow | S | do | do | 28.7 | 34.8 | 39.6 | 37.2 | do | do | do | | |
| 618 | Ink, printing | S | do | do | 49.0 | 55.0 | 46.2 | 50.6 | do | do | do | | |
| 619 | Ink, writing | S | do | do | 83.0 | 56.6 | 58.2 | 57.4 | do | do | do | | |
| 621 | Mucilage, paste, and other adhesives | S | do | do | 35.6 | 44.7 | 54.7 | 49.7 | do | do | do | | |
| 622 | Oil, cake, and meal, cottonseed | S | do | do | 32.9 | 16.5 | 14.6 | 15.6 | do | Raw material | do | 37.4 | Do. |
| 623 | Oil, cake, and meal, linseed | S | do | do | 87.9 | 15.3 | 19.0 | 17.2 | do | do | do | 52.1 | Adequate. |
| 624 | Oils, essential | S | do | Semimanufactured | 98.3 | 42.8 | 26.5 | 34.7 | do | Other | do | | |
| 625 | Oils, n. e. c | S | do | do | 42.6 | 18.3 | 30.6 | 24.5 | do | do | Mixed | | |
| 626 | Paints, pigments, and varnishes | M | do | Finished | 32.3 | 41.3 | 44.4 | 42.9 | do | do | do | 71.4 | Do. |
| 627 | Insecticides and fungicides, etc | S | do | do | 16.6 | (1) | 54.4 | | do | do | do | | |
| 628 | Perfumes, cosmetics, and other toilet preparations | S | do | do | 25.3 | 69.9 | 62.7 | 66.3 | do | do | do | | |
| 629 | Rayon and allied products | M | do | Semimanufactured | 74.3 | 77.7 | 65.1 | 71.4 | do | do | Straight | 51.7 | Do. |
| 630 | Salt | S | do | Finished | 60.3 | 63.4 | 63.2 | 63.3 | do | Raw material | do | 104.5 | Do. |
| 631 | Soap | S | do | do | 73.5 | 41.9 | 41.7 | 41.8 | do | Other | do | 76.2 | Do. |
| 632 | Tanning materials, natural dyestuffs, etc | S | do | Semimanufactured | 33.9 | 36.4 | 41.4 | 38.9 | do | do | do | 53.1 | Poor. |
| 633 | Wood distillation and charcoal manufacture | S | do | do | 53.5 | 50.0 | 50.4 | 50.2 | do | Raw material | do | 72.5 | Fair. |
| | PRODUCTS OF PETROLEUM AND COAL | | | | | | | | | | | | |
| 701 | Coke-oven products | S | do | Finished | 48.8 | 32.4 | 24.4 | 28.4 | Regional | Other | Mixed | 92.6 | Adequate. |
| 702 | Fuel briquettes | S | do | do | (3) | 37.7 | 30.9 | 34.3 | do | do | Straight | | |
| 703 | Gas, manufactured | M | do | do | 37.6 | 63.2 | 71.7 | 67.5 | Local | Consumer | do | | |
| 704 | Lubricating greases | S | do | do | 26.0 | 43.1 | 42.4 | 42.8 | National | Other | do | | |
| 705 | Petroleum refining | M | do | do | 38.2 | 23.0 | 19.6 | 21.3 | do | do | do | 61.7 | Do. |
| | RUBBER PRODUCTS | | | | | | | | | | | | |
| 801 | Boots and shoes, rubber | S | Semidurable | do | 81.8 | 66.5 | 61.0 | 63.8 | do | do | do | | |
| 802 | Rubber goods, other than tires, etc | M | do | do | 19.2 | 53.1 | 53.8 | 53.5 | do | do | do | | |
| 803 | Rubber tires and inner tubes | M | do | do | 80.9 | 44.2 | 40.5 | 42.4 | do | do | do | | |
| | LEATHER AND ITS MANUFACTURES | | | | | | | | | | | | |
| 901 | Belting and packing, leather | S | do | do | 39.9 | 42.0 | 46.3 | 44.2 | do | do | do | 87.5 | Fair. |
| 902 | Boot and shoe cut stock and findings | S | do | Semimanufactured | 32.2 | 19.4 | 27.4 | 33.1 | do | do | do | | |
| 904 | Boots and shoes other than rubber | L | do | Finished | 26.0 | 46.7 | 48.2 | 47.5 | do | do | Mixed | 70.1 | Do. |
| 905 | Gloves and mittens, leather | S | do | do | 14.4 | 48.4 | 52.3 | 50.4 | do | do | Straight | | |

TABLE I. *Summary of data for manufacturing industries, 1935* Continued

| Industry number | Name of industry | Size code | Classification by durable, semidurable, and nondurable | Classification by semimanufactured and finished | Concentration index | Value added ratio 1929 | Value added ratio 1935 | Average value added per man-hour 1935 | Type of market | Location determinant | Type of industry | Price ratio 1929 | Reliability of price data in relation to Census classification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | LEATHER AND ITS MANUFACTURES continued | | | | | | | | | | | | |
| 906 | Leather goods, n. e. c. | S | Semidurable | Finished | 19.1 | 49.9 | 49.7 | 49.8 | National | Other | Mixed | | |
| 907 | Leather: Tanned, curried and finished | M | do | Semimanufactured | 22.5 | 29.8 | 35.8 | 32.8 | do | do | Straight | 59.4 | Adequate. |
| 908 | Pocketbooks, purses, and card cases | S | do | Finished | 8.4 | 48.5 | 48.2 | 48.4 | do | do | do | | |
| 909 | Saddlery, harness and whips | S | do | do | 26.0 | 40.7 | 42.1 | 41.3 | do | do | do | 83.1 | Fair. |
| 910 | Trunks, suitcases and bags | S | do | do | 17.2 | 36.4 | 47.2 | 38.8 | do | do | do | 77.4 | Adequate. |
| | STONE, CLAY, AND GLASS PRODUCTS | | | | | | | | | | | | |
| 1001 | Asbestos products other than steam packing, etc. | S | Durable | do | 63.1 | 54.8 | 55.0 | 54.9 | do | do | do | | |
| 1002 | Cement | S | do | Semimanufactured | 29.9 | 64.4 | 64.3 | 64.4 | Regional | do | do | 67.1 | Fair. |
| 1003 | China firing and decorating | S | do | Finished | 80.3 | 58.8 | 49.1 | 51.0 | National | do | do | | |
| 1004 | Clay products (other than pottery and nonclay refractories. | M | do | do | 19.3 | 72.3 | 68.5 | 70.4 | Regional | Other | Mixed | 82.8 | Poor. |
| 1005 | Concrete products | S | do | do | 10.2 | 63.4 | 57.3 | 91.1 | do | do | Straight | 80.8 | Do. |
| 1008 | Glass | M | do | do | 44.9 | 66.0 | 64.3 | 65.7 | National | do | do | 91.4 | Fair. |
| 1010 | Graphite, ground and refined | S | do | Semimanufactured | 86.4 | 61.2 | 55.6 | 58.1 | do | do | do | | |
| 1013 | Lime | S | do | do | 22.7 | 61.2 | 61.7 | 61.5 | Regional | Raw material | do | 86.2 | Adequate. |
| 1014 | Marble, granite, slate and other stone | S | do | Finished | 9.5 | 70.0 | 67.7 | 68.9 | do | do | Mixed | | |
| 1015 | Minerals and earths, ground and otherwise treated. | S | do | Semimanufactured | 18.8 | 49.0 | 59.7 | 52.9 | National | do | do | | |
| 1016 | Mirrors and other glass products | S | do | Finished | 55.4 | 50.9 | 57.6 | 54.3 | do | Other | Straight | | |
| 1017 | Pottery, including porcelain ware | M | do | do | 19.0 | 77.6 | 73.1 | 74.4 | do | do | Mixed | 80.1 | Fair. |
| 1018 | Sand-lime brick | S | do | do | 65.1 | 68.2 | 58.9 | 63.6 | Region 1 | do | Straight | 78.6 | Adequate. |
| 1019 | Statuary and art goods | S | do | do | 34.6 | 79.6 | 77.0 | 78.3 | National | do | do | | |
| 1020 | Wall board and plaster, etc. | S | do | do | 51.0 | 59.9 | 62.4 | 61.2 | do | do | do | 108.7 | Do. |
| 1021 | Abrasive wheels, stones, paper, and cloth. | S | do | do | 67.4 | 61.3 | 61.5 | 61.4 | do | do | do | | |
| 1022 | Gypsum products | S | do | do | 76.1 | [1] | 66.5 | | do | Raw material | do | | |
| | IRON AND STEEL AND THEIR PRODUCTS | | | | | | | | | | | | |
| 1101 | Bolts, nuts, washers, and rivets | S | do | do | 35.6 | 56.8 | 49.4 | 53.1 | do | Other | do | 81.8 | Fair. |
| 1102 | Cast-iron pipe and fittings | S | do | do | 42.4 | 57.3 | 60.9 | 59.1 | do | do | do | 82.9 | Adequate. |
| 1103 | Cutlery and edge tools | S | do | do | 23.3 | 81.2 | 75.4 | 78.3 | do | do | Mixed | 91.3 | Fair. |
| 1104 | Doors, shutters, and window sash and frame, molding and trim, metal. | S | do | do | 33.3 | 58.2 | 56.2 | 57.2 | do | do | Straight | | |
| 1105 | Files | S | do | do | 87.8 | 78.4 | 75.7 | 77.1 | do | do | do | 100.0 | Adequate. |
| 1106 | Firearms | S | do | do | 81.0 | 81.3 | 73.9 | 77.6 | do | do | do | | |
| 1107 | Forgings, iron and steel | S | do | Semimanufactured | 21.0 | 54.2 | 47.7 | 51.0 | Regional | do | do | | |
| 1108 | Galvanizing and other coating | S | do | do | 37.1 | 48.6 | 61.4 | 55.0 | National | do | do | | |
| 1109 | Hardware, n. e. c. | M | do | Finished | 30.4 | 66.7 | 61.1 | 63.9 | do | do | Mixed | | |
| 1110 | Blast-furnace products | S | do | Semimanufactured | 66.0 | 20.9 | 19.8 | 20.4 | do | do | Straight | 76.5 | Poor. |
| 1112 | Steel-works and rolling-mill products | L | do | do | 19.3 | 43.1 | 42.5 | 43.0 | do | do | do | 82.3 | Adequate. |
| 1113 | Nails, spikes, etc. | S | do | Finished | 48.3 | 53.7 | 55.1 | 54.4 | do | do | do | 79.7 | Fair. |
| 1114 | Plumbers' supplies, not including pipe or vitreous-china sanitary ware. | S | do | do | 31.3 | 62.2 | 57.9 | 60.1 | do | do | do | 78.2 | Do. |
| 1115 | Safes and vaults | S | do | do | 84.8 | 67.0 | 63.7 | 65.4 | do | do | do | | |
| 1116 | Saws | S | do | do | 63.4 | 69.6 | 69.6 | 69.6 | do | do | do | 95.1 | Adequate. |
| 1117 | Screw-machine products and wood-screws. | S | do | do | 22.2 | 62.8 | 57.8 | 60.3 | do | do | do | | |
| 1118 | Springs, steel except wire | S | do | Semimanufactured | 53.6 | 45.6 | 39.4 | 42.5 | do | do | do | | |
| 1119 | Steam and hot-water heating apparatus and steam fittings. | M | do | Finished | 38.7 | 68.2 | 66.5 | 67.4 | Regional | do | do | 56.1 | Fair. |
| 1120 | Steel barrels, kegs, and drums | S | do | do | 37.0 | 41.9 | 39.3 | 40.6 | do | do | do | 70.0 | Adequate. |
| 1121 | Stoves and ranges and warm-air furnaces. | M | do | do | 16.1 | 62.9 | 59.1 | 61.0 | National | do | Mixed | 84.7 | Fair. |
| 1122 | Structural and ornamental metal work. | M | do | do | 24.5 | 48.7 | 42.4 | 45.6 | Regional | do | do | | |
| 1123 | Tin cans and other tinware | M | Semidurable | do | 80.8 | 34.3 | 29.5 | 31.9 | National | do | do | 91.7 | Do. |
| 1126 | Tools | S | Durable | do | 23.9 | 67.7 | 64.4 | 66.1 | do | do | Straight | 89.4 | Do. |
| 1126 | Wire drawn from purchased rods | S | do | Semimanufactured | 40.2 | 28.0 | 46.2 | 37.1 | do | do | do | | |
| 1127 | Wirework, n. e. c. | M | do | Finished | 23.1 | 53.6 | 52.7 | 53.2 | do | do | Mixed | 87.5 | Poor. |
| 1128 | Wrought pipe, welded and heavy riveted. | S | do | do | 47.4 | 43.7 | 43.1 | 43.4 | Regional | do | Straight | 93.1 | Fair. |
| 1129 | Stamped and pressed metal products, etc. | M | do | do | 12.0 | 57.1 | 51.5 | 54.3 | National | do | Mixed | | |
| | NONFERROUS METALS AND THEIR PRODUCTS | | | | | | | | | | | | |
| 1201 | Aluminum products | S | do | Semimanufactured | 76.0 | 38.7 | 43.9 | 41.3 | do | do | Straight | | |
| 1202 | Clocks, watches, time-recording devices, etc. | S | do | Finished | 37.7 | 74.7 | 63.2 | 69.0 | do | do | Mixed | | |
| 1203 | Collapsible tubes | S | Nondurable | do | 52.8 | 39.6 | 41.6 | 40.6 | do | do | Straight | | |
| 1204 | Sheet-metal work, not specifically classified. | S | Durable | do | 17.8 | 49.4 | 47.2 | 48.3 | Local | Consumer | Mixed | | |
| 1205 | Electroplating | S | do | Semimanufactured | 12.4 | 79.8 | 74.9 | 77.4 | National | Other | Straight | | |
| 1206 | Fire extinguishers, chemical | S | do | Finished | 57.1 | 51.1 | 53.7 | 52.4 | do | do | do | | |
| 1207 | Lighting equipment | S | do | do | 24.4 | 60.1 | 53.4 | 56.8 | Regional | do | do | | |
| 1208 | Gold leaf and foil | S | do | Semimanufactured | 75.5 | 51.4 | 46.2 | 48.8 | National | do | do | | |
| 1209 | Gold, silver, and platinum refining and alloying. | S | do | do | 65.1 | 9.4 | 8.0 | 8.7 | do | do | do | | |
| 1210 | Jewelry | S | do | Finished | 9.5 | 55.0 | 57.3 | 56.2 | do | do | Mixed | | |
| 1211 | Needles, pins, hooks and eyes, and snap fasteners. | S | do | do | 63.4 | 71.9 | 71.7 | 71.8 | do | do | Straight | | |
| 1212 | Nonferrous metal alloys and nonferrous metal products. | M | do | Semimanufactured | 37.8 | 34.0 | 44.1 | 39.1 | do | do | Mixed | 54.4 | Fair. |
| 1213 | Silverware and plated ware | S | do | Finished | 55.6 | 68.7 | 64.9 | 66.8 | do | do | do | | |
| 1215 | Smelting and refining, copper | S | do | Semimanufactured | [2] | 7.5 | 10.8 | 9.2 | do | Raw material | Straight | | |
| 1216 | Smelting and refining, lead | S | do | do | [3] | 12.1 | 11.1 | 11.6 | do | do | do | | |
| 1217 | Smelting and refining, nonferrous metals other than gold, silver, and platinum. | S | do | do | 42.6 | 21.2 | 16.9 | 19.1 | do | Other | do | | |
| 1218 | Smelting and refining, zinc | S | do | do | 64.0 | 37.1 | 37.0 | 37.1 | do | do | do | 48.5 | Adequate. |
| 1220 | Tin and other foils | S | do | do | [4] | 35.3 | 36.5 | 35.9 | do | do | do | | |
| 1222 | Wateheases | S | do | do | 58.3 | 65.7 | 60.5 | 63.1 | do | do | do | | |
| 1224 | Jewelers' findings and materials | S | do | do | 40.7 | [5] | 36.2 | | do | do | Mixed | | |

TABLE I.—*Summary of data for manufacturing industries, 1935*—Continued

| Industry number | Name of industry | Size code | Classification by durable, semidurable, and nondurable | Classification by semimanufactured and finished | Concentration index | Value added ratio 1929 | Value added ratio 1935 | Average value added 1929–1935 | Type of market | Location determinant | Type of industry | Price ratio 1932/29 | Reliability of price data in relation to Census classification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | MACHINERY, NOT INCLUDING TRANSPORTATION EQUIPMENT | | | | | | | | | | | | |
| 1301 | Agricultural implements | M | Durable | Finished | 72.4 | 59.0 | 52.1 | 55.6 | Other | Mixed | Straight | 84.9 | Adequate. |
| 1302 | Cash registers and adding, calculating, and card tabulating machines. | S | do | do | 21.3 | 90.2 | 85.1 | 87.8 | do | do | Mixed | | |
| 1303 | Electrical machinery, apparatus and supplies | L | do | do | 44.4 | 58.8 | 61.4 | 60.1 | do | do | do | | |
| 1304 | Engines, turbines, water wheels and windmills. | M | do | do | 30.7 | 55.7 | 57.9 | 56.8 | do | do | do | | |
| 1305 | Machinery, n. e. c. | L | do | do | 7.0 | (1) | 62.5 | | do | do | do | | |
| 1307 | Machine tools | M | do | do | 13.8 | 73.7 | 70.1 | 71.9 | do | do | do | | |
| 1309 | Pumps (hand and power) and pumping equipment | S | do | do | 22.7 | 59.3 | 59.1 | 59.4 | do | do | do | | |
| 1310 | Refrigerators and refrigerating and ice-making apparatus. | M | do | do | 46.1 | 55.5 | 48.1 | 51.8 | do | do | do | | |
| 1311 | Scales and balances | S | do | do | 51.8 | 75.5 | 71.7 | 73.6 | do | do | Straight | | |
| 1312 | Sewing machines and attachments | S | do | do | 78.9 | 63.5 | 73.3 | 68.4 | do | do | do | 80.4 | Do. |
| 1313 | Textile machinery and parts | S | do | do | 29.4 | 70.1 | 66.1 | 68.3 | do | do | do | | |
| 1314 | Typewriters and parts | S | do | do | 99.3 | 88.3 | 74.5 | 81.4 | do | do | do | | |
| 1315 | Washing machines, wringers, driers, etc. | S | do | do | 56.0 | 50.6 | 40.7 | 45.7 | do | do | do | 66.5 | Do. |
| 1318 | Machine tool accessories and machinists' precision tools. | M | do | do | 21.8 | 81.3 | 72.2 | 76.8 | do | do | Mixed | | |
| 1319 | Radio apparatus and phonographs | M | do | do | 28.6 | (1) | 48.5 | | do | do | Straight | | |
| 1321 | Boiler shops | S | do | do | 22.1 | (1) | 50.8 | | do | do | do | | |
| 1322 | Foundries | M | do | Semimanufactured | 25.2 | 62.8 | 64.1 | 63.5 | Local | Consumer | do | 77.6 | Do. |
| 1324 | Cranes, dredging, and excavating and roadbuilding machinery. | S | do | Finished | 29.3 | (1) | 54.1 | | National | Other | Mixed | | |
| 1327 | Printers' machinery | S | do | do | 32.5 | (1) | 74.7 | | do | do | Straight | | |
| 1329 | Machine shops | M | do | Semimanufactured | 8.7 | (1) | 58.7 | | Local | Consumer | do | | |
| | TRANSPORTATION EQUIPMENT, LAND, AIR, AND WATER | | | | | | | | | | | | |
| 1401 | Aircraft and parts | S | do | Finished | 53.9 | 61.5 | 69.1 | 65.3 | National | Other | do | | |
| 1403 | Carriages and sleds, children's | S | do | do | 47.0 | 53.1 | 52.2 | 52.7 | do | do | do | | |
| 1404 | Carriages, wagons, sleighs, and sleds | S | do | do | 45.8 | 48.5 | 46.2 | 47.4 | Regional | do | do | 84.0 | Fair. |
| 1405 | Cars, electric and steam railroad | S | do | do | 71.7 | 31.8 | 38.6 | 35.2 | National | do | do | | |
| 1406 | Locomotives | S | do | do | (2) | 37.0 | 45.3 | 41.4 | do | do | do | | |
| 1407 | Motor-vehicle bodies and parts | L | do | Semimanufactured | 69.4 | 44.3 | 35.4 | 39.9 | do | do | Mixed | | |
| 1408 | Motor vehicles, not including motorcycles. | L | do | Finished | 87.3 | 35.5 | 24.1 | 29.8 | do | do | Straight | 88.9 | Do. |
| 1409 | Motorcycles, bicycles, and parts | S | do | do | 60.6 | 52.8 | 44.4 | 48.6 | do | do | Mixed | | |
| 1410 | Ship and boat building, steel and wooden, including repair work. | M | do | do | 44.8 | 62.9 | 60.9 | 61.9 | do | do | do | | |
| | RAILROAD REPAIR SHOPS | | | | | | | | | | | | |
| 1501 | Railroad repair shops, electric | S | Non-durable | do | 32.3 | 61.7 | 64.0 | 62.9 | do | do | Straight | | |
| 1502 | Railroad repair shops, steam | L | do | do | 37.4 | 58.1 | 54.2 | 56.2 | do | do | do | | |
| | MISCELLANEOUS INDUSTRIES | | | | | | | | | | | | |
| 1601 | Artificial and preserved flowers and plants. | S | Semidurable | do | 21.7 | 61.7 | 63.2 | 62.5 | do | do | do | | |
| 1603 | Artists' materials | S | do | do | 52.3 | 56.1 | 49.7 | 52.9 | do | do | do | | |
| 1604 | Brooms | S | do | do | 16.2 | 49.7 | 47.8 | 48.8 | do | do | do | | |
| 1605 | Brushes, other than rubber | S | do | do | 33.3 | 52.4 | 55.3 | 54.1 | do | do | do | | |
| 1606 | Buttons | S | do | do | 15.4 | 60.3 | 60.4 | 60.4 | do | do | Mixed | | |
| 1607 | Carbon paper and inked ribbons | S | Nondurable | do | 35.6 | 53.8 | 49.0 | 51.4 | do | do | Straight | | |
| 1608 | Cigars | M | do | do | 38.5 | 47.5 | 48.6 | 48.1 | do | do | do | 93.6 | Adequate. |
| 1609 | Combs and hairpins | S | Semidurable | do | 88.1 | 59.4 | 55.4 | 57.4 | do | do | do | | |
| 1611 | Dentists' equipment and supplies | S | Durable | do | 51.6 | 50.7 | 60.3 | 55.5 | do | do | Mixed | | |
| 1612 | Miscellaneous articles, n. e. c. | S | Semidurable | do | 11.6 | 58.8 | 58.3 | 58.6 | do | do | do | | |
| 1613 | Feathers, plumes, and manufactures thereof | S | do | do | 35.1 | 66.2 | 62.8 | 64.5 | do | do | Straight | | |
| 1614 | Foundry supplies | S | do | do | 52.0 | 47.1 | 47.1 | 47.1 | do | do | do | | |
| 1615 | Fur goods | S | do | do | 2.6 | 36.6 | 38.4 | 37.5 | do | do | do | | |
| 1616 | Furs, dressed and dyed | S | do | Semimanufactured | 27.3 | 53.7 | 69.5 | 61.6 | do | do | do | | |
| 1617 | Hairwork | S | do | Finished | 48.5 | 68.2 | 62.0 | 65.1 | do | do | do | | |
| 1618 | Hand stamps and stencils and brands | S | Durable | do | 18.1 | 74.7 | 71.5 | 73.1 | do | do | do | | |
| 1620 | Instruments, professional and scientific. | S | do | do | 28.2 | 68.3 | 69.9 | 69.1 | do | do | Mixed | | |
| 1622 | Jewelry and instrument cases | S | do | do | 34.8 | 62.3 | 63.0 | 62.7 | do | do | Straight | | |
| 1623 | Lapidary work | S | do | Semimanufactured | 37.6 | 34.0 | 39.6 | 35.3 | do | do | do | | |
| 1624 | Mattresses and bed springs, n. e. c. | S | do | Finished | 25.8 | 50.1 | 42.3 | 46.2 | do | do | Mixed | | |
| 1625 | Models and patterns | S | do | do | 11.7 | 82.6 | 79.1 | 80.9 | do | do | Straight | | |
| 1627 | Musical instrument parts and materials: piano and organ. | S | do | Semimanufactured | 41.4 | 64.3 | 61.6 | 63.0 | do | do | do | | |
| 1628 | Musical instruments and parts and material, n. e. c. | S | do | do | 41.5 | 73.2 | 69.9 | 71.6 | do | do | do | | |
| 1629 | Musical instruments: organs | S | do | Finished | 57.0 | 72.7 | 66.0 | 69.4 | do | do | do | | |
| 1630 | Musical instruments: pianos | S | do | do | 54.1 | 55.6 | 55.8 | 55.7 | do | do | do | | |
| 1631 | Optical goods | S | do | do | 62.3 | 70.8 | 67.0 | 68.9 | do | do | do | | |
| 1632 | Paving materials, blocks and mixtures. | S | do | do | 48.9 | 53.6 | 44.2 | 48.9 | Regional | do | do | | |
| 1633 | Pencils, lead and crayons | S | Nondurable | do | 44.9 | 61.3 | 58.7 | 60.0 | National | do | do | | |
| 1634 | Pens, fountain and stylographic; pen points, gold, steel, and brass. | S | Semidurable | do | 70.4 | 66.5 | 67.7 | 67.2 | do | do | do | | |
| 1636 | Photographic apparatus and materials. | S | do | do | 77.9 | 70.4 | 62.7 | 66.6 | do | do | do | | |
| 1637 | Pipes (tobacco) | S | do | do | 62.2 | 68.5 | 68.5 | 68.5 | do | do | do | | |
| 1638 | Roofing, built-up and roll, etc. | S | Durable | do | 42.8 | 40.7 | 43.6 | 42.2 | do | do | do | | |
| 1640 | Signs and advertising novelties | S | do | do | 9.2 | 69.8 | 65.4 | 67.6 | Local | Consumer | Mixed | | |
| 1641 | Soda fountains and accessories | S | do | do | 74.0 | 57.2 | 49.8 | 53.5 | National | Other | Straight | | |
| 1642 | Sporting and athletic goods | S | Semidurable | do | 36.0 | 58.0 | 52.5 | 55.3 | do | do | Mixed | | |
| 1643 | Steam and other packing, etc. | S | do | do | 46.9 | 52.5 | 51.6 | 52.1 | do | do | Straight | | |

TABLE I *Summary of data for manufacturing industries, 1958* Continued

| Industry number | Name of industry | Size code | Classification by durable, semidurable, and nondurable | Classification by semimanufactured and finished | Concentration ratio (%) | Value added ratio 1954 | Value added ratio 1958 | Average value added 1954–1958 | Type of market | Location determinant | Type of industry | Price ratio 1947–49 | Reliability of price data in relation to Census classification |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | MISCELLANEOUS INDUSTRIES—con. | | | | | | | | | | | | |
| 1645 | Surgical and orthopedic appliances and related products | S | Durable | Finished | 67.3 | 49.7 | 41.5 | 47.6 | National | Other | Mixed | | |
| 1646 | Theatrical scenery and equipment | S | do | do | 29.9 | 61.9 | 61.3 | 61.6 | do | do | Straight | | |
| 1647 | Tobacco, (chewing and smoking) and snuff | S | Nondurable | do | 68.5 | 59.6 | 33.6 | 46.6 | do | do | do | 66.9 | Fair. |
| 1648 | Toys, games, and playground equipment | S | Durable | do | 16.6 | 59.9 | 54.6 | 57.3 | do | do | Mixed | | |
| 1649 | Umbrellas, parasols, and canes | S | Semidurable | do | 30.9 | 39.1 | 39.1 | 39.3 | do | do | Straight | | |
| 1651 | Window shades and equipment | S | do | do | 34.0 | 46.5 | 52.6 | 49.6 | do | do | do | 70.6 | Adequate. |
| 1652 | Cigarettes | M | Nondurable | do | 80.7 | 26.9 | 20.5 | 23.7 | do | do | do | 111.0 | Do. |
| 1653 | Beauty-shop equipment | S | Durable | do | 39.6 | [4] | 59.9 | | do | do | do | | |
| 1654 | Wood pulling | S | Nondurable | Semimanufactured | 52.5 | 20.0 | 27.3 | 23.7 | do | do | do | | |

[1] No comparable data.
[2] Concentration data not shown because of approximate disclosure of individual operations.
[3] Concentration data not shown because of unreliable data.
[4] Largest 8 enterprises, combined to avoid disclosure of individual operations.

# APPENDIX 9.—DATA ON 200 LARGEST MANUFACTURING ENTERPRISES, 1935[1]

The following tables showing data for the 200 largest manufacturing enterprises are results of unpublished census compilations made available through the courtesy of the Bureau of the Census.

Special tabulations were prepared from the Census of Manufactures data for 1935 combining the activities of all establishments operating under a common ownership regardless of the industry in which the establishments were classified. This tabulation made possible the selection of the largest multiple-establishment enterprises, to which were added the largest single-establishment enterprises. From this combined list of large enterprises, ranked according to the value of products, data for the 200 largest manufacturing enterprises were tabulated.

In order to avoid the possibility of disclosure for individual enterprises in the figures presented, a more stringent procedure has been followed than is usually employed by the Census Bureau. Ordinarily in the

[1] Appendix 9 was prepared by Grace W. Knott.

TABLE I.—*Leading 200 manufacturing enterprises (based on value of products), grouped by fives and ranked according to value added by manufacture, 1935*

[Values are in thousands of dollars]

| Groups | Number of establishments | Salaried employees | | Wage earners | | Cost of materials, containers, fuel, and purchased electric energy [3 4] | Value of products [3 4] | Value added by manufacture [3 4] | Total manpower [5] | Total wages and salaries |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Number [1] | Salaries [1 3] | Average for year [2] | Wages [2] | | | | | |
| 1 | 296 | 42,861 | 87,877 | 448,383 | 621,575 | 2,966,246 | 4,325,631 | 1,359,385 | 491,244 | 709,452 |
| 2 | 919 | 29,845 | 61,896 | 160,358 | 190,862 | 1,433,456 | 1,972,036 | 538,580 | 190,203 | 252,758 |
| 3 | 134 | 13,918 | 29,663 | 119,031 | 148,392 | 576,516 | 921,490 | 344,974 | 132,949 | 178,055 |
| 4 | 135 | 9,011 | 19,998 | 65,666 | 75,950 | 460,855 | 730,888 | 270,033 | 74,677 | 95,948 |
| 5 | 219 | 13,017 | 29,868 | 73,415 | 97,402 | 432,011 | 670,376 | 238,365 | 86,432 | 127,270 |
| 6 | 154 | 4,488 | 9,807 | 71,824 | 78,071 | 423,162 | 652,640 | 229,478 | 76,312 | 87,878 |
| 7 | 67 | 6,923 | 13,551 | 72,360 | 81,807 | 240,816 | 440,862 | 200,046 | 79,283 | 95,358 |
| 8 | 185 | 5,024 | 10,825 | 46,786 | 63,302 | 262,210 | 449,676 | 187,466 | 51,810 | 74,127 |
| 9 | 129 | 6,262 | 13,468 | 71,582 | 82,697 | 275,941 | 449,449 | 173,508 | 77,844 | 96,165 |
| 10 | 637 | 5,550 | 10,974 | 28,836 | 31,781 | 290,252 | 449,089 | 158,837 | 34,386 | 42,755 |
| 11 | 89 | 7,649 | 17,823 | 35,329 | 49,500 | 263,117 | 412,447 | 149,330 | 42,978 | 67,323 |
| 12 | 160 | 7,258 | 14,072 | 47,801 | 56,480 | 199,909 | 343,687 | 143,778 | 55,059 | 70,552 |
| 13 | 64 | 4,215 | 8,971 | 27,174 | 34,377 | 317,797 | 452,515 | 134,718 | 31,389 | 43,348 |
| 14 | 220 | 2,557 | 4,896 | 22,546 | 25,629 | 285,936 | 401,093 | 115,157 | 25,103 | 30,525 |
| 15 | 67 | 4,657 | 10,104 | 27,060 | 31,847 | 96,395 | 204,271 | 107,876 | 31,717 | 41,951 |
| 16 | 163 | 3,213 | 6,256 | 22,262 | 27,904 | 108,087 | 209,749 | 101,662 | 25,475 | 34,160 |
| 17 | 85 | 3,398 | 7,851 | 21,668 | 25,071 | 310,870 | 408,698 | 97,828 | 25,066 | 32,922 |
| 18 | 124 | 5,831 | 11,578 | 33,760 | 38,615 | 228,769 | 323,411 | 94,642 | 39,591 | 50,193 |
| 19 | 102 | 2,551 | 5,650 | 22,403 | 29,130 | 130,678 | 221,758 | 91,080 | 24,954 | 34,780 |
| 20 | 70 | 3,136 | 6,979 | 24,950 | 25,688 | 190,133 | 277,733 | 87,600 | 28,086 | 32,667 |
| 21 | 109 | 3,551 | 7,500 | 41,396 | 37,616 | 249,510 | 334,036 | 84,526 | 44,947 | 45,116 |
| 22 | 30 | 3,801 | 6,992 | 15,797 | 19,692 | 102,005 | 183,234 | 81,229 | 19,598 | 26,684 |
| 23 | 40 | 2,441 | 5,290 | 15,184 | 18,401 | 86,451 | 162,918 | 76,467 | 17,625 | 23,691 |
| 24 | 71 | 3,076 | 6,452 | 26,340 | 32,618 | 58,622 | 133,222 | 74,600 | 29,416 | 39,070 |
| 25 | 65 | 2,467 | 5,247 | 18,636 | 20,572 | 75,042 | 147,333 | 72,291 | 21,103 | 25,819 |
| 26 | 42 | 2,541 | 5,122 | 26,786 | 27,963 | 133,550 | 202,762 | 69,212 | 29,327 | 33,085 |
| 27 | 178 | 2,687 | 5,768 | 22,964 | 26,205 | 100,357 | 167,743 | 67,386 | 25,651 | 31,973 |
| 28 | 63 | 2,778 | 5,515 | 18,847 | 19,639 | 52,478 | 117,454 | 64,976 | 21,595 | 25,154 |
| 29 | 37 | 2,109 | 4,377 | 25,157 | 25,783 | 63,397 | 125,825 | 62,428 | 27,266 | 30,160 |
| 30 | 187 | 3,524 | 8,748 | 22,542 | 29,848 | 38,073 | 98,439 | 60,366 | 26,066 | 38,596 |
| 31 | 78 | 1,995 | 4,551 | 24,260 | 30,818 | 61,136 | 120,525 | 59,389 | 26,255 | 35,369 |
| 32 | 64 | 2,514 | 5,826 | 16,796 | 21,171 | 154,515 | 213,012 | 58,497 | 19,310 | 26,997 |
| 33 | 28 | 2,500 | 5,399 | 16,836 | 18,839 | 49,862 | 107,144 | 57,282 | 19,336 | 24,238 |
| 34 | 27 | 3,172 | 7,877 | 24,029 | 25,119 | 73,179 | 128,806 | 55,627 | 27,201 | 33,296 |
| 35 | 143 | 2,398 | 4,356 | 21,315 | 17,842 | 90,700 | 144,781 | 54,081 | 23,713 | 22,198 |
| 36 | 46 | 3,312 | 6,134 | 21,116 | 22,813 | 44,250 | 97,543 | 53,293 | 24,428 | 28,947 |
| 37 | 179 | 2,321 | 4,601 | 13,460 | 14,240 | 61,705 | 113,312 | 51,607 | 15,781 | 18,841 |
| 38 | 56 | 3,184 | 6,255 | 23,164 | 27,555 | 107,834 | 158,032 | 50,198 | 26,348 | 33,810 |
| 39 | 112 | 2,235 | 4,443 | 15,966 | 17,917 | 58,424 | 107,555 | 49,131 | 18,201 | 22,360 |
| 40 | 23 | 2,073 | 3,891 | 9,653 | 11,457 | 37,494 | 85,167 | 47,673 | 11,726 | 15,348 |
| Total for 200 enterprises | 5,597 | 236,043 | 496,451 | 1,863,408 | 2,282,488 | 11,191,740 | 17,266,342 | 6,074,602 | 2,099,451 | 2,778,939 |
| Total all manufacturing industries | 169,111 | 1,076,073 | 2,291,092 | 7,378,845 | 7,544,338 | 26,263,494 | 45,759,763 | 19,496,269 | 8,454,918 | 9,836,030 |

[1] No data for employees of central administrative offices are included.

[2] This is an average of the numbers reported for the several months of the year. In calculating it, equal weight must be given to full-time and part-time wage earners (not reported separately to the Census Bureau) and for this reason it exceeds the number that would have been required to perform the work done in the industries if all wage earners had been continuously employed throughout the year. The quotient obtained by dividing the amount of wages by the average number of wage earners cannot, therefore, be accepted as representing the average wages received by full-time wage earners.

[3] Profits and losses cannot be calculated from the Census figures because no data are collected for certain expense items, such as interest, rent, depreciation, taxes, insurance, and advertising.

[4] The aggregates for cost of materials and value of products include large amounts of duplication due to the use of the products of some industries as materials by others. For the United States as a whole, this duplication amounts to about one-third of the gross value of products.

[5] Wage earners and salaried employees.

Source: Census of Manufactures 1935—Special tabulations.

census reports figures are given for three or more establishments when it can be done without disclosing approximations of data for individual concerns. In these tabulations figures are shown for groups of five enterprises only.

Table I shows the 200 enterprises ranked according to the value added by manufacture and grouped by fives; table II presents the data for these enterprises ranked according to total manpower (salaried employees plus wage earners) and grouped by fives; and table III shows the 200 enterprises ranked according to value of products and grouped by fives.

Data are shown for the following items:

1. Number of establishments.
2. Number of salaried employees.
3. Salaries.
4. Average number of wage earners.
5. Wages.
6. Cost of materials, containers, fuel and purchased electric energy.
7. Value of products.
8. Value added by manufacture.
9. Total manpower (salaried employees plus average number of wage earners).
10. Salaries and wages.

The terms are those employed by the Census Bureau in their published reports of the *Census of Manufactures, 1935*.

TABLE II.— *Leading 200 manufacturing enterprises (based on value of products), grouped by fives and ranked according to manpower, 1935*

[Values in thousands of dollars]

| Groups | Number of establishments | Salaried employees | | Wage earners | | Cost of materials, containers, fuel, and purchased electric energy | Value of products | Value added by manufacture | Total manpower | Total wages and salaries |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Number | Salaries | Average for year | Wages | | | | | |
| 1 | 293 | 36,044 | 75,133 | 456,919 | 630,240 | 3,033,960 | 4,334,238 | 1,300,278 | 492,963 | 705,373 |
| 2 | 316 | 31,762 | 61,266 | 173,972 | 206,859 | 1,452,034 | 2,020,740 | 568,706 | 205,734 | 268,125 |
| 3 | 240 | 12,939 | 26,618 | 128,265 | 147,037 | 392,018 | 671,770 | 279,752 | 141,204 | 173,655 |
| 4 | 92 | 9,519 | 20,747 | 102,441 | 120,668 | 424,370 | 671,547 | 247,177 | 111,960 | 141,415 |
| 5 | 71 | 11,132 | 25,571 | 78,136 | 99,959 | 230,492 | 478,614 | 248,122 | 89,268 | 125,530 |
| 6 | 217 | 9,786 | 19,972 | 71,545 | 81,579 | 398,634 | 598,931 | 200,297 | 81,331 | 101,551 |
| 7 | 60 | 13,048 | 30,322 | 56,589 | 75,894 | 175,481 | 379,098 | 204,517 | 69,637 | 106,216 |
| 8 | 135 | 4,613 | 10,199 | 59,234 | 58,173 | 571,728 | 785,510 | 213,782 | 63,847 | 68,372 |
| 9 | 168 | 5,644 | 10,894 | 53,441 | 56,943 | 293,120 | 442,165 | 149,045 | 59,085 | 67,837 |
| 10 | 209 | 5,350 | 11,157 | 46,821 | 55,931 | 113,918 | 236,074 | 122,156 | 52,171 | 67,088 |
| 11 | 93 | 4,658 | 12,085 | 42,176 | 55,868 | 197,740 | 348,659 | 150,919 | 46,834 | 67,953 |
| 12 | 417 | 5,160 | 9,834 | 39,165 | 45,286 | 264,673 | 382,172 | 117,499 | 44,325 | 55,120 |
| 13 | 101 | 3,899 | 7,777 | 39,228 | 48,055 | 93,862 | 171,863 | 78,001 | 43,127 | 55,832 |
| 14 | 126 | 3,413 | 6,946 | 36,948 | 33,909 | 302,513 | 403,215 | 100,702 | 40,361 | 40,855 |
| 15 | 127 | 3,810 | 8,603 | 34,427 | 42,954 | 217,701 | 297,988 | 80,287 | 38,237 | 51,557 |
| 16 | 74 | 3,828 | 8,101 | 33,416 | 34,301 | 414,576 | 490,735 | 76,159 | 37,244 | 42,402 |
| 17 | 58 | 6,189 | 12,252 | 30,199 | 40,676 | 114,218 | 235,038 | 120,820 | 36,388 | 52,928 |
| 18 | 40 | 6,597 | 12,753 | 28,730 | 36,276 | 186,679 | 289,246 | 102,587 | 35,327 | 49,029 |
| 19 | 57 | 2,780 | 6,173 | 30,734 | 34,446 | 53,224 | 139,822 | 86,598 | 33,514 | 40,619 |
| 20 | 128 | 3,648 | 6,907 | 27,374 | 30,702 | 188,056 | 263,480 | 75,424 | 31,022 | 37,609 |
| 21 | 137 | 4,456 | 10,706 | 24,498 | 36,778 | 81,330 | 174,767 | 93,437 | 28,954 | 47,464 |
| 22 | 38 | 2,331 | 4,564 | 23,710 | 24,182 | 127,372 | 191,233 | 63,861 | 26,071 | 28,746 |
| 23 | 110 | 2,638 | 5,569 | 22,090 | 23,303 | 346,654 | 475,982 | 129,328 | 24,728 | 28,872 |
| 24 | 42 | 3,181 | 8,082 | 20,867 | 24,625 | 97,062 | 162,823 | 65,761 | 24,048 | 32,707 |
| 25 | 263 | 2,909 | 6,017 | 20,102 | 22,710 | 79,529 | 160,283 | 80,754 | 23,011 | 28,727 |
| 26 | 92 | 2,495 | 5,645 | 19,491 | 21,760 | 58,211 | 122,296 | 64,085 | 21,986 | 27,405 |
| 27 | 37 | 3,989 | 7,895 | 17,163 | 19,296 | 138,130 | 211,640 | 73,510 | 21,152 | 27,191 |
| 28 | 72 | 2,991 | 6,267 | 17,209 | 19,991 | 187,922 | 267,101 | 79,179 | 20,200 | 26,258 |
| 29 | 129 | 3,558 | 6,564 | 15,649 | 18,653 | 78,985 | 131,162 | 52,177 | 19,207 | 25,217 |
| 30 | 57 | 2,784 | 6,409 | 15,585 | 18,594 | 82,595 | 157,833 | 75,238 | 18,369 | 25,003 |
| 31 | 38 | 2,898 | 6,966 | 14,782 | 16,045 | 69,182 | 132,677 | 63,495 | 17,680 | 23,011 |
| 32 | 113 | 2,122 | 3,903 | 14,178 | 15,666 | 69,866 | 148,868 | 79,002 | 16,600 | 19,659 |
| 33 | 90 | 3,790 | 7,555 | 11,818 | 15,745 | 156,616 | 245,465 | 88,849 | 15,608 | 23,300 |
| 34 | 280 | 2,469 | 5,651 | 11,982 | 15,238 | 115,376 | 197,042 | 81,666 | 14,451 | 20,889 |
| 35 | 214 | 2,097 | 4,008 | 10,382 | 11,325 | 85,350 | 155,493 | 70,143 | 12,479 | 15,333 |
| 36 | 106 | 1,883 | 4,600 | 9,528 | 11,350 | 80,251 | 153,727 | 73,476 | 11,411 | 15,950 |
| 37 | 92 | 1,427 | 3,076 | 8,603 | 11,350 | 56,027 | 168,098 | 112,071 | 10,030 | 14,426 |
| 38 | 48 | 1,842 | 4,140 | 6,836 | 9,472 | 97,767 | 165,302 | 67,535 | 8,678 | 13,612 |
| 39 | 35 | 864 | 2,368 | 6,184 | 7,852 | 28,923 | 95,407 | 66,484 | 7,048 | 10,220 |
| 40 | 42 | 1,500 | 3,066 | 2,661 | 2,817 | 35,615 | 107,338 | 71,723 | 4,161 | 5,883 |
| Total for 200 enterprises | 5,597 | 236,043 | 496,451 | 1,863,408 | 2,282,488 | 11,191,740 | 17,266,342 | 6,074,602 | 2,099,451 | 2,778,939 |
| Total, all manufacturing industries | 169,141 | 1,076,073 | 2,291,693 | 7,378,845 | 7,514,338 | 26,263,494 | 45,759,763 | 19,496,269 | 8,454,918 | 9,836,030 |

For explanation of footnotes, see table 1, appendix 9

Source: *Census of Manufactures 1935—Special Tabulations.*

TABLE III.—*Leading 200 manufacturing enterprises (based on value of products), grouped by fives and ranked according to value of products, 1935*

[Values in thousands of dollars]

| Groups | Number of establishments | Salaried employees | | Wage earners | | Cost of materials, containers, fuel, and purchased electric energy | Value of products | Value added by manufacture | Total manpower | Total wages and salaries |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Number | Salaries | Average for year | Wages | | | | | |
| 1 | 708 | 38,931 | 79,298 | 448,696 | 619,636 | 3,547,759 | 4,848,189 | 1,300,430 | 487,627 | $698,934 |
| 2 | 428 | 21,668 | 43,296 | 136,536 | 149,993 | 1,153,926 | 1,588,720 | 434,794 | 158,294 | 193,289 |
| 3 | 173 | 10,648 | 25,071 | 95,272 | 117,655 | 800,301 | 1,172,687 | 372,386 | 105,920 | 142,126 |
| 4 | 159 | 10,636 | 20,346 | 70,665 | 89,094 | 685,900 | 894,493 | 208,593 | 81,301 | 109,440 |
| 5 | 132 | 8,834 | 18,865 | 70,567 | 89,406 | 525,376 | 737,105 | 211,729 | 79,401 | 108,271 |
| 6 | 114 | 6,431 | 12,607 | 57,283 | 65,584 | 503,738 | 659,225 | 155,487 | 63,714 | 78,191 |
| 7 | 471 | 14,303 | 31,927 | 40,848 | 56,342 | 344,637 | 599,752 | 255,115 | 55,151 | 88,269 |
| 8 | 152 | 9,611 | 19,116 | 83,351 | 94,283 | 332,574 | 571,338 | 238,764 | 92,962 | 113,399 |
| 9 | 65 | 6,447 | 13,679 | 60,796 | 78,225 | 323,573 | 502,967 | 179,394 | 67,243 | 91,904 |
| 10 | 216 | 4,322 | 8,927 | 59,266 | 60,009 | 272,491 | 427,149 | 154,658 | 63,588 | 68,936 |
| 11 | 158 | 7,123 | 15,840 | 61,350 | 76,776 | 219,239 | 380,965 | 161,726 | 68,473 | 92,616 |
| 12 | 317 | 4,424 | 9,348 | 29,162 | 33,244 | 249,790 | 358,332 | 108,542 | 33,586 | 42,592 |
| 13 | 280 | 4,200 | 8,540 | 37,334 | 46,035 | 224,817 | 340,063 | 115,246 | 41,534 | 54,575 |
| 14 | 145 | 7,354 | 18,530 | 29,021 | 38,350 | 189,045 | 310,665 | 121,620 | 36,355 | 56,880 |
| 15 | 45 | 3,893 | 7,950 | 46,510 | 53,070 | 130,791 | 287,409 | 156,618 | 50,403 | 61,020 |
| 16 | 48 | 2,994 | 6,926 | 22,378 | 30,424 | 139,877 | 261,117 | 121,240 | 25,372 | 37,350 |
| 17 | 209 | 3,272 | 6,628 | 17,992 | 21,668 | 149,526 | 237,950 | 88,424 | 21,264 | 28,296 |
| 18 | 74 | 4,251 | 10,494 | 14,917 | 21,609 | 95,848 | 226,762 | 130,914 | 19,168 | 32,103 |
| 19 | 104 | 2,182 | 4,774 | 26,975 | 28,307 | 125,204 | 216,807 | 91,603 | 29,157 | 33,081 |
| 20 | 101 | 3,169 | 5,909 | 33,565 | 30,545 | 106,040 | 205,068 | 99,028 | 36,734 | 36,454 |
| 21 | 68 | 2,186 | 4,946 | 25,985 | 29,822 | 120,693 | 196,943 | 76,250 | 28,171 | 34,768 |
| 22 | 40 | 9,818 | 19,664 | 33,525 | 42,624 | 84,345 | 185,120 | 100,775 | 43,343 | 62,288 |
| 23 | 56 | 2,431 | 4,476 | 30,249 | 31,122 | 89,508 | 174,589 | 85,081 | 32,680 | 35,598 |
| 24 | 73 | 2,086 | 4,182 | 26,644 | 28,772 | 87,198 | 163,189 | 75,991 | 28,730 | 32,954 |
| 25 | 94 | 2,040 | 4,216 | 21,052 | 20,498 | 68,722 | 154,680 | 85,958 | 23,092 | 24,714 |
| 26 | 75 | 2,115 | 4,844 | 23,789 | 23,408 | 85,899 | 148,775 | 62,876 | 25,904 | 28,252 |
| 27 | 76 | 3,809 | 7,773 | 17,835 | 21,672 | 54,781 | 140,367 | 85,586 | 21,644 | 29,445 |
| 28 | 35 | 2,156 | 4,207 | 19,563 | 22,258 | 57,860 | 130,045 | 72,185 | 21,719 | 26,465 |
| 29 | 85 | 4,428 | 8,491 | 21,419 | 26,784 | 46,061 | 120,430 | 74,369 | 25,847 | 35,275 |
| 30 | 99 | 1,854 | 4,324 | 21,584 | 26,297 | 50,569 | 114,443 | 63,874 | 23,438 | 30,621 |
| 31 | 27 | 2,339 | 4,601 | 19,888 | 19,774 | 41,815 | 109,636 | 67,821 | 22,227 | 24,375 |
| 32 | 69 | 2,783 | 5,972 | 23,255 | 23,092 | 53,086 | 107,083 | 53,997 | 26,038 | 29,064 |
| 33 | 78 | 1,926 | 4,742 | 23,545 | 28,499 | 38,134 | 102,793 | 64,659 | 25,471 | 33,241 |
| 34 | 78 | 3,473 | 8,307 | 17,149 | 22,210 | 35,123 | 99,008 | 63,885 | 20,622 | 30,577 |
| 35 | 34 | 2,758 | 5,296 | 18,335 | 21,364 | 39,211 | 96,050 | 56,839 | 21,093 | 26,660 |
| 36 | 61 | 3,165 | 6,326 | 23,875 | 28,360 | 30,786 | 91,778 | 60,992 | 27,040 | 34,686 |
| 37 | 109 | 3,638 | 8,467 | 12,502 | 15,709 | 30,112 | 87,588 | 57,476 | 16,230 | 24,176 |
| 38 | 28 | 2,964 | 7,069 | 17,794 | 22,236 | 23,011 | 79,797 | 56,786 | 20,758 | 29,305 |
| 39 | 204 | 2,378 | 4,352 | 13,314 | 17,085 | 20,840 | 73,844 | 53,004 | 15,692 | 21,437 |
| 40 | 19 | 3,023 | 6,065 | 9,532 | 11,247 | 13,534 | 63,421 | 49,887 | 12,555 | 17,312 |
| Total for 200 enterprises | 5,597 | 236,043 | 496,451 | 1,863,408 | 2,282,488 | 11,191,740 | 17,266,342 | 6,074,602 | 2,099,451 | 2,778,939 |
| Total, all manufacturing industries | 169,111 | 1,076,073 | 2,291,693 | 7,378,845 | 7,544,338 | 26,263,494 | 45,759,763 | 19,496,269 | 8,454,918 | 9,836,030 |

For explanation of footnotes, see table I, appendix 9.

Source: *Census of Manufactures 1935—Special Tabulations.*

# APPENDIX 10.—THE 200 LARGEST NON-FINANCIAL CORPORATIONS IN 1935 AND THEIR ASSETS 1929–1936[1]

The first step in this study of corporate concentration is the bringing up to date of the figures published in 1930 by Berle & Means in *The Modern Corporation and Private Property*. Those figures covered the years through 1929. The information on assets of individual corporations was secured from the manuals issued yearly by Moody's Investment Service. When the present study was begun, the 1937 set of manuals was not yet complete. The 1936 manuals, giving information as of December 31, 1935, provided the latest data available.

The three 1936 manuals for nonfinancial companies—industrials, public utilities and railroads—were scanned, page by page, and the total asset figure for each balance sheet noted. All companies reporting assets of $50,000,000 and over were listed. In every case where a reserve for depreciation and or depletion was listed on the liability side of the balance sheet, this reserve was deducted from the total asset figure, so that the figures used represent in all but a few instances total assets less depreciation. In the case of a few companies, the information supplied did not indicate whether such deduction had been made in reporting their total assets, and no reserve for depreciation appeared among the liabilities.

No company was listed if more than 50 percent of its voting stock was owned directly or indirectly by another company. In some cases, the information with regard to control provided by Moody's was supplemented by material filed with the Securities and Exchange Commission.

From the list of nonfinancial companies with assets of $50,000,000 and over the list of the 200 largest for 1935 was made up. A list of the 200 largest for 1932 was made by following the same procedure, beginning with a page-by-page scanning of the 1933 manuals, etc.

These two lists and the Berle & Means list for 1929 provided the names of 268 companies which appeared on the list of the 200 largest nonfinancial corporations in 1929, 1932, and 1935. A card was made for each company of the 268, listing the Moody's figure for total assets less depreciation for each year from 1929 to 1935, inclusive.

By sorting these cards in order of size for each year, a list of the 200 largest was secured for 1930, 1931, 1933, and 1934, and a figure for the total assets of the 200 largest for each of these years was arrived at. It was assumed that while a page-by-page examination of the manuals for these intervening years might reveal cases of error in the individual companies included on the list, the change in the total asset figure for the 200 would not be significant.

When the 1937 volumes of Moody's manuals became available, a list of the 200 largest nonfinancial corporations for 1936 was compiled by following the same procedure as for 1935 and 1932.

Total assets of the 200 largest nonfinancial corporations for the years from 1929 to 1936 are listed below:

| | *Millions of dollars* |
|---|---|
| 1929 | 78,081.7 |
| 1930 | 81,754.6 |
| 1931 | 81,220.4 |
| 1932 | 76,854.1 |
| 1933 | 75,906.2 |
| 1934 | 71,619.8 |
| 1935 | 74,231.8 |
| 1936 | 75,375.2 |

The marked drops in total assets between 1931 and 1932 and between 1933 and 1934 are accounted for largely by the fact that in each of these years a large group of companies wrote down their assets.

The difference between the total assets figure for 1929 derived above (78.1 billion dollars) and the figure for this year published by Berle & Means (81.0 billion dollars) is accounted for in great measure by the decision to exclude companies, included by Berle & Means, whose assets were principally foreign. If these companies are included, the total assets of the 200 largest corporations are as follows:

| | *Millions of dollars* |
|---|---|
| 1929 | 78,909.6 |
| 1930 | 82,796.8 |
| 1931 | 82,148.3 |
| 1932 | 77,533.5 |
| 1933 | 76,586.7 |
| 1934 | 75,329.7 |
| 1935 | 74,843.3 |
| 1936 | 76,056.9 |

Inclusion of these foreign-asset corporations would make the following change in the accompanying list for 1935:[2]

[1] Appendix 10 was prepared by Helen Hurd.

[2] If the foreign-asset corporations included by Berle & Means were omitted, their list and their figure for total assets would be changed as follows:

| | *Assets in millions* |
|---|---|
| Foreign-asset corporations included by Berle & Means: | |
| American & Foreign Power Co | 756.0 |
| International Match Corp | 217.6 |
| Cuban Cane Products Co | 101.4 |
| Total | 1,075.0 |
| Domestic corporations to be substituted: | |
| Continental Can Co | 83.2 |
| American Metal Co., Ltd | 82.4 |
| U. S. Smelting and Refining Co | 81.7 |
| Total | 246.3 |

| | Assets 1935 |
|---|---|
| *Foreign-Asset Corporation included:* | |
| American & Foreign Power Co | 750. 6 |
| *Domestic corporation displaced:* | |
| Natural Gas Pipeline Co. of America | 67. 3 |

The remaining difference between the above estimate of total assets of the 200 largest nonfinancial corporations in 1929 and the Berle & Means estimate is due to the fact that information relating to 1929 has become available since the publication of the Berle & Means estimate. The most important of such information is the reporting by Moody's of the depreciation account of the American Telephone & Telegraph Co.

A list of the 200 largest nonfinancial corporations in 1935 obtained by the method described above is given below:

TABLE I. *Two hundred largest nonfinancial corporations in the United States 1935*

[Asset figures obtained from Moody's in millions of dollars]

| INDUSTRIALS | Assets |
|---|---|
| Standard Oil Co. (N. J.) | 1, 894. 9 |
| United States Steel Corporation | 1, 822. 4 |
| General Motors Corporation (estimated) | [1] 1, 491. 9 |
| Socony-Vacuum Oil Co., Inc | 789. 7 |
| Standard Oil Co. (Ind.) | 693. 5 |
| Ford Motor Co | 681. 6 |
| Bethlehem Steel Corporation | 673. 1 |
| Anaconda Copper Mining Co | 581. 5 |
| E. I. DuPont de Nemours & Co | 581. 1 |
| Standard Oil Co. of California | 579. 5 |
| The Texas Corporation | 473. 8 |
| Gulf Oil Corporation | 430. 2 |
| General Electric Co | 398. 1 |
| International Harvester Co | 365. 2 |
| Shell Union Oil Corporation | 358. 1 |
| Consolidated Oil Corporation | 331. 1 |
| The Koppers Co. (estimated) | [2] 331. 0 |
| Kennecott Copper Corporation | 323. 6 |
| Swift & Co | 321. 4 |
| Armour & Co. (Ill.) | 317. 1 |
| Republic Steel Corporation | 297. 5 |
| Union Carbide & Carbon Corporation | 271. 1 |
| The American Tobacco Co | 264. 2 |
| Pullman Incorporated | 258. 6 |
| Allied Chemical & Dye Corporation | 252. 5 |
| Sears, Roebuck & Co | 234. 0 |
| Aluminum Co. of America | 223. 0 |
| American Can Co | 209. 1 |
| Youngstown Sheet & Tube Co | 207. 5 |
| Westinghouse Electric & Manufacturing Co | 194. 5 |
| Chrysler Corporation | 193. 5 |
| F. W. Woolworth Co | 192. 3 |
| The Goodyear Tire & Rubber Co | 192. 3 |
| National Dairy Products Corporation | 192. 0 |

[1] Assets of General Motors Acceptance Corporation, less value of total capital stock, plus assets of General Motors Corporation.

[2] Assets of Koppers Gas & Coke Co., plus assets of Eastern Gas & Fuel Associates, plus assets of Brooklyn Borough Gas Co., less the investment of Koppers Gas & Coke Co. in the latter two companies. Fuel Investment Associates, a 100-percent-owned subsidiary of The Koppers Co., owned 56.7 percent of the common stock of Eastern Gas & Fuel Associates. Another 21.1 percent was owned by Koppers Gas & Coke Co., also a wholly owned subsidiary of The Koppers Co. The Gas & Coke Co. owned more than 98 percent of the stock of Brooklyn Borough Gas Co.

TABLE I. *Two hundred largest nonfinancial corporations in the United States 1935*—Continued

| INDUSTRIALS—continued | Assets |
|---|---|
| Great Atlantic & Pacific Tea Co. of America | 189. 2 |
| Phelps Dodge Corporation | 185. 1 |
| Jones & Laughlin Steel Corporation | 185. 0 |
| United Fruit Co | 184. 9 |
| Tide Water Associated Oil Co | 182. 8 |
| National Steel Corporation | 180. 5 |
| Singer Manufacturing Co | 175. 8 |
| Phillips Petroleum Co | 174. 5 |
| American Smelting & Refining Co | 171. 7 |
| Liggett & Myers Tobacco Co | 170. 5 |
| Montgomery Ward & Co., Inc | 168. 7 |
| Warner Bros. Pictures, Inc | 168. 5 |
| Eastman Kodak Co | 168. 3 |
| The Atlantic Refining Co | 163. 0 |
| United States Rubber Co | 159. 3 |
| American Radiator & Standard Sanitary Corporation | 159. 1 |
| The Pure Oil Co | 157. 2 |
| R. J. Reynolds Tobacco Co | 153. 9 |
| Union Oil Co. of California | 151. 7 |
| Glen Alden Coal Co | 151. 4 |
| Pittsburgh Coal Co | 142. 2 |
| Ohio Oil Co | 139. 7 |
| The Firestone Tire & Rubber Co | 139. 3 |
| Loew's Incorporated | 128. 6 |
| Hearst Consolidated Publications Inc | 128. 6 |
| The Procter & Gamble Co | 127. 1 |
| National Biscuit Co | 124. 5 |
| The B. F. Goodrich Co | 124. 0 |
| The American Rolling Mill Co | 123. 0 |
| The Borden Co | 120. 1 |
| Paramount Pictures, Inc | 118. 9 |
| Corn Products Refining Co | 118. 7 |
| S. S. Kresge Co | 118. 5 |
| Inland Steel Co | 118. 3 |
| The American Sugar Refining Co | 117. 7 |
| Wheeling Steel Corporation | 113. 0 |
| Pittsburgh Plate Glass Co | 109. 7 |
| Crucible Steel Co. of America | 109. 1 |
| Sun Oil Co | 107. 1 |
| National Lead Co | 104. 0 |
| Radio Corporation of America | 102. 5 |
| Crown Zellerbach Corporation | 101. 3 |
| Marshall Field & Co | 97. 0 |
| United Shoe Machinery Corporation | 96. 4 |
| General American Transportation Corporation | 96. 3 |
| Crane Co | 95. 2 |
| Continental Can Co., Inc | 94. 6 |
| Philadelphia & Reading Coal & Iron Corporation | 93. 0 |
| Continental Oil Co | 91. 7 |
| American Car & Foundry Co | 91. 2 |
| R. H. Macy & Co., Inc | 90. 5 |
| International Shoe Co | 83. 2 |
| The Lehigh Coal & Navigation Co | 82. 0 |
| Gimbel Bros., Inc | 79. 9 |
| Deere & Co | 79. 7 |
| Wilson & Co., Inc | 79. 2 |
| Climax Molybdenum Co | 79. 1 |
| Minnesota & Ontario Paper Co | 78. 2 |
| The Cudahy Packing Co | 76. 4 |
| Brown Co | 76. 4 |
| J. C. Penney Co | 74. 4 |
| St. Regis Paper Co | 73. 7 |

TABLE I *Two-hundred largest nonfinancial corporation in the United States 1935*—Continued

| | Assets |
|---|---|
| **INDUSTRIALS—continued** | |
| Allis-Chalmers Manufacturing Co | 73. 2 |
| U. S. Smelting, Refining & Mining Co | 73. 0 |
| Columbia Oil & Gasoline Corporation | 71. 8 |
| McKesson & Robbins, Inc. (Md.) | 71. 4 |
| American Woolen Co | 71. 0 |
| S. H. Kress & Co | 70. 4 |
| The Baldwin Locomotive Works | 69. 7 |
| The Cleveland Cliffs Iron Co | 69. 5 |
| American I. G. Chemical Corporation | 69. 3 |
| General Foods Corporation | 67. 9 |
| Interlake Iron Corporation | 67. 4 |
| **PUBLIC UTILITIES** | |
| American Telephone & Telegraph Co | 3,998. 3 |
| Consolidated Edison Co. of New York, Inc | 1,377. 0 |
| Commonwealth & Southern Corp | 1,173. 8 |
| Associated Gas & Electric Properties (estimated) | [3] 1,125. 4 |
| Cities Service Co | 1,113. 2 |
| The North American Co. (estimated) | [4] 1,042. 6 |
| The United Gas Improvement Co | 812. 9 |
| American Power & Light Co | [5] 795. 9 |
| International Paper & Power Co | [6] 771. 2 |
| Public Service Corporation of New Jersey | 694. 0 |
| Electric Power & Light Corporation | [5] 651. 5 |
| Niagara Hudson Power Corporation | 648. 0 |
| Pacific Gas & Electric Co | 647. 3 |
| Standard Gas & Electric Co | [7] 637. 3 |
| Columbia Gas & Electric Corporation | 584. 7 |
| Interborough Rapid Transit Co | 554. 8 |
| National Power & Light Co | [5] 546. 8 |
| The United Light & Power Co | 537. 2 |
| International Telephone & Telegraph Corporation | 489. 7 |
| American Gas & Electric Co | [5] 417. 7 |

[3] Associated Gas & Electric Properties is a Massachusetts trust controlling the Associated Gas & Electric Co. (assets $1,016,705,000), through the Associated Securities Corporation; and controlling the New England Gas & Electric Association (assets, $108,579,000), through Munson Securities. Included in the consolidated balance sheet of the Associated Gas & Electric Co. are the assets of the Rochester Gas & Electric Corporation. All the voting stock of this corporation is owned by companies in the Associated Gas & Electric System. Control of the corporation has been lodged since July 15, 1932, in a voting trust dominated by Chase National Bank and Guaranty Trust Co. of New York. The trust is to terminate in 1942 when control will revert to the Associated Gas & Electric Co. The assets for Rochester Gas & Electric Corporation for 1935 were $78,100,000.

[4] Assets of the North American Co., plus assets of the North American Light & Power Co., less the investment of the former in the latter

[5] The four major domestic companies in the Electric Bond & Share Group are listed as individual corporations.

[6] Assets of International Paper & Power Co., plus assets of International Hydro-Electric System.

[7] As revised in statement to the Securities and Exchange Commission, June 22, 1935. The company's books showed total assets, less depreciation, of $801,392,000, on Dec. 31, 1934, and $793,257,000, on Dec. 31, 1936. Standard Gas & Electric Co is actually controlled by the H. M. Byllesby Corporation, although Moody's credits the control to United States Electric Power Corporation. The latter elects only a minority of the board of Standard Gas & Electric Co.

TABLE I. *Two-hundred largest nonfinancial corporations in the United States 1935*—Continued

| | Assets |
|---|---|
| **PUBLIC UTILITIES—continued** | |
| Middle West Corporation (estimated | [8] 400. 0 |
| American Water Works & Electric Co | 396. 7 |
| Commonwealth Edison Co | [9] 376. 4 |
| Stone & Webster, Inc | 371. 7 |
| Utilities Power & Light Corporation | 367. 2 |
| Southern California Edison Co., Ltd | 360. 2 |
| Western Union Telegraph Co | 311. 6 |
| The Detroit Edison Co | 327. 2 |
| Midland United Co. (estimated) | [10] 320. 0 |
| Brooklyn-Manhattan Transit Corporation | 300. 4 |
| Public Service Co. of Northern Illinois | [9] 226. 1 |
| Duke Power Co | 213. 6 |
| The Peoples Gas Light & Coke Co | 211. 4 |
| Pacific Lighting Corporation | 194. 3 |
| The Edison Electric Illuminating Co. of Boston | 181. 8 |
| Federal Water Service Corporation | 176. 7 |
| Consolidated Gas Electric Light & Power Co. of Baltimore | 160. 1 |
| Central Public Utility Corporation | [11] 151. 6 |
| Lone Star Gas Corporation | 134. 3 |
| Long Island Lighting Co | 127. 6 |
| Hudson & Manhattan Railroad Co | 125. 5 |
| The Brooklyn Union Gas Co | 121. 8 |
| Chicago Railways Co | 112. 0 |
| Boston Elevated Railway Co | 110. 6 |
| Third Avenue Railway Co. (estimated) | [12] 107. 2 |
| Portland Electric Power Co | 95. 0 |
| Community Water Service Co | 84. 5 |
| Jersey Central Power & Light Co | 80. 1 |
| Associated Telephone Utilities Co | 79. 4 |
| Philadelphia Rapid Transit Co | 73. 0 |
| St. Louis Public Service Co | 72. 8 |

[8] Company was reorganized in November 1935 after going into receivership in 1932. Assets at the end of 1936 were reported as $444,187,000. Since no important additions or subtractions had been made in 1936, an estimate of $400,000,000 for 1935 and 1934 seems to be conservative

[9] A report of the Federal Power Commission (National Power Survey, Principal Electric Utility Systems in the United States, Power Series No. 2, 1935) showing the corporate relationships of the principal electric utility systems in the United States in 1935 shows Commonwealth Edison Co. owning directly 28.5 percent of the voting stock of the Public Service Co. of Northern Illinois, and 30.0 percent through the Commonwealth Subsidiary Corporation, a wholly owned subsidiary. A prospectus filed with the Securities and Exchange Commission, however, shows no direct stockholding by Commonwealth Edison in the Public Service Co. of Northern Illinois. Hence both are included as separate corporations.

[10] Company went into hands of trustee July 7, 1934. No balance sheet was filed from this date until Dec. 31, 1936. On that date, combined assets of subsidiaries were $318,000,000. Estimate was made by interpolation between 1933 figure and 1936 figure

[11] The figures here given are for the assets of Consolidated Electric & Gas Co., a wholly owned subsidiary of Central Public Utility Corporation. The assets of the latter for 1935 were $50,328,000, of which $50,258,000 were investments in Consolidated Electric & Gas Co.

[12] Total assets of Third Avenue Railway Co. less depreciation, plus total assets of subsidiary companies, less investment of Third Avenue Railway Co. in "securities of associated companies," less "advances to associated companies," and less "miscellaneous investments."

TABLE 1—*Two hundred largest nonfinancial corperations in the United States 1935*—Continued

PUBLIC UTILITIES—continued

| | Assets |
|---|---|
| National Fuel Gas Co | 72. 4 |
| The Baltimore Transit Co | 67. 7 |
| Natural Gas Pipeline Co. of America | 67. 3 |

RAILROADS

| | |
|---|---|
| The Pennsylvania R. R. Co. (estimated) | [13] 2, 863. 0 |
| The New York Central R. R. Co. (estimated) | [13] 2, 356. 0 |
| Alleghany Corporation (estimated) | [14] 1, 739. 0 |
| Southern Pacific Co | 1, 677. 7 |
| The Great Northern Ry. Co. (estimated) | [15] 1, 152. 1 |
| Northern Pacific Ry. Co (estimated) | [15] 1, 131. 2 |
| Baltimore & Ohio R. R. Co | 1, 118. 3 |
| The Atchison, Topeka & Santa Fe Railway Co | 1, 091. 6 |
| Union Pacific R. R. Co | 1, 069. 6 |
| Atlantic Coast Line R. R. Co. (estimated) | [16] 786. 5 |
| Chicago, Milwaukee, St. Paul and Pacific R. R. Co | 699. 5 |
| The Illinois Central R. R. Co | 656. 8 |
| Missouri Pacific R. R. Co | 617. 3 |
| Chicago & Northwestern Ry. Co | 598. 2 |

[13] To allow for unconsolidated subsidiaries, in 1929 the total asset figure given in Moody's was increased by a small percentage. The 1935 figure was increased by the same percentage.

[14] Total assets, less reserve for depreciation, of New York, Chicago & St. Louis R. R. Co.; The Wheeling & Lake Erie Ry. Co.; Erie R. R. Co.; Chesapeake & Ohio Ry. Co.; and the Pere Marquette Ry. Co.

[15] Total assets, plus 50 percent of total assets of Chicago, Burlington & Quincy R. R. Co., and 50 percent of total assets of Spokane, Portland & Seattle Ry. Co. These two companies are controlled jointly by the Great Northern Ry. Co. and Northern Pacific Ry. Co.

[16] Assets of Atlantic Coast Line R. R. Co., less depreciation, plus assets of Louisville & Nashville R. R. Co., less depreciation.

TABLE 1.—*Two hundred largest nonfinancial corperations in the United States 1935*—Continued

RAILROADS—continued

| | Assets |
|---|---|
| Southern Railway Co | 587. 1 |
| The New York, New Haven, & Hartford R. R. Co | 535. 9 |
| Reading Co. (estimated) | [17] 495. 3 |
| Chicago, Rock Island & Pacific Railway Co | 481. 2 |
| Norfolk & Western Ry. Co | 467. 9 |
| St. Louis–San Francisco Railway Co | 417. 9 |
| Wabash Railway Co | 318. 6 |
| Boston & Maine R. R. Co | 295. 4 |
| Seaboard Air Line Ry. Co | 272. 1 |
| Missouri-Kansas-Texas R. R. Co | 249. 6 |
| The Delaware & Hudson Co | 235. 8 |
| The Denver & Rio Grande Western Railroad Co | 233. 1 |
| Lehigh Valley Railroad Co | 217. 0 |
| The Western Pacific R. R. Corporation (estimated) | [18] 196. 8 |
| The Delaware, Lackawanna & Western Railroad Co | 176. 4 |
| Western Maryland Ry. Co | 168. 1 |
| The Virginian Ry. Co | 153. 4 |
| Chicago Great Western R. R. Co | 141. 3 |
| Kansas City Southern Ry. Co | 131. 3 |
| Florida East Coast Ry. Co | 123. 2 |
| Chicago Union Station Co | 91. 4 |
| Chicago & Western Indiana R. R. Co | 88. 9 |
| Chicago & Eastern Illinois Ry. Co | 80. 2 |
| Terminal Railroad Association of St. Louis | [19] 77. 0 |
| Minneapolis & St. Louis R. R. Co | 72. 0 |

[17] Assets of Reading Co., less depreciation, plus assets of Central R. R. Co. of New Jersey, less investment of Reading Co. in affiliated companies.

[18] Total assets of Western Pacific R. R. Corporation, less investment in Western Pacific R. R. Co., plus total assets of Western Pacific R. R. Co., less depreciation.

[19] Owned by 15 roads which use the terminals in St. Louis.

# APPENDIX 11.—ASSETS AND INCOME OF 200 LARGEST NONFINANCIAL AND 50 LARGEST FINANCIAL CORPORATE UNITS[1]

## PART I NONFINANCIAL CORPORATIONS

### 1. Methods and Procedures

#### Definitions

In the basic data for this study, a corporation is simply a corporate unit filing an income-tax return with the Bureau of Internal Revenue. In some years corporations were permitted to submit consolidated income-tax returns, and hence income statements and balance sheets, which included all subsidiaries, 95 percent or more of whose voting stock was held by the parent or other 95 percent-controlled subsidiaries of the same parent. All such subsidiaries whose returns were consolidated with those of their parents are herein called *consolidated subsidiaries*.

When the term *200 corporations* is used in this study what is intended is really 200 corporate units of control, and consolidated subsidiaries are therefore included. In considering units of control, all subsidiaries controlled should be included. The Interstate Commerce Commission considers the ownership of over 50 percent of the voting stock a sufficient condition to call a corporation a subsidiary. The Securities and Exchange Commission is legally permitted to call any company an "actively controlled" subsidiary if there is any evidence that actual control is exercised, whether 50 percent of the voting stock is held by the parent or not. In practice, the Securities and Exchange Commission ordinarily uses the term to apply to companies 50 percent or more of whose voting stock is held by one corporate unit of control. All such companies, however, do not appear upon their records. In this report all companies in which a majority of the voting stock is held by any corporation or combination of corporations in or controlled by the 200 largest are called subsidiaries. If the income tax return of such a company is not consolidated with that of its parent it is called an unconsolidated subsidiary. A corporation, then, is a corporate unit of control and is composed of a parent corporation, its consolidated subsidiaries, if any, and its unconsolidated subsidiaries which meet the majority control criterion. Actually there may be, and undoubtedly often are, other actively controlled corporations in the unit, but this criterion does not class them as subsidiaries. They are, therefore, excluded from the corporation, as here defined, and so from the totals for the 200 largest.

It should be emphasized that in employing this definition of subsidiary there is no intention to imply that a given proportion of stock ownership carries with it actual control. Majority stock ownership is an indication of ability to control, but is evidence neither of the minimum amount of ownership necessary for control nor yet of complete domination. Defining subsidiary in this way carries no implications of complete ownership. A parent may actually control the policies of a subsidiary even if it owns much less than 50 percent of its assets. Majority stock ownership is assumed to be evidence of ability to control, not of actual control, nor of complete ownership.

From practical considerations of statistical procedure and with a limited amount of time and clerical assistance available, all unconsolidated subsidiaries with total assets under 10 million dollars in 1933 were eliminated from the tabulation of the 200, no matter what percent of the voting stock was owned by the parent. The consolidated subsidiaries were included, however, since their assets could not be isolated from those of the parent corporation in the consolidated returns.

For 1929 a corresponding minimum for total assets was derived, the figure being close to 14 million dollars. All unconsolidated subsidiaries below the minimum were discarded. The details of the method of arriving at the corresponding minimum for 1929 and its interpretation are to be found in section 3.

#### Derivation of Lists of 200 Largest Corporations in 1929 and 1933

The lists of the 200 largest corporations were determined independently for 1929 and 1933. They were chosen on the basis of total assets shown by corporate returns filed with the Bureau of Internal Revenue plus total assets of all unconsolidated subsidiaries with assets of more than the minimum described in the previous section. Pure holding companies and financial companies were excluded, unless they were subsidiaries of parents on the list.

While this report uses total assets minus taxable investments as a general measure of size,[2] the lists were

[1] Appendix II was prepared by Ezra Glaser and Betty Goldwasser; some preliminary work done by Robert L. Smith. While all of the data in this appendix have been compiled directly from income-tax records except where specifically stated otherwise, the returns to be compiled have been selected and classified on the basis of independent information derived from other sources so that the compiled figures are nowhere available in the published or unpublished records of the Bureau of Internal Revenue.

[2] See section 4 for the significance of this measure of size.

compiled on the basis of total assets (including taxable investments). The use of total assets results in the inclusion of some companies which would have been too small had total assets less taxable investments been the criterion of choice. Certain other companies, whose taxable investments formed a smaller proportion of their total assets, were excluded from the 200 because their total assets were not large enough. Therefore, the list compiled is not actually the 200 largest measured by total assets less taxable investments.[3]

The procedure for deriving the lists was as follows:

For 1929, the returns of nonfinancial corporations with assets of 50 million dollars or more were inspected, and the companies arranged in order of size. This list was supplemented by comparisons with lists of large companies from other sources, such as the Interstate Commerce Commission and Moody's *Manuals*. This cross-comparison acted as a dragnet for corporations which submitted no balance sheets, and consequently no figure for total assets, to the Bureau of Internal Revenue. The 250 largest corporations, measured by total assets, were chosen for further inspection. (Consolidated subsidiaries were included, by necessity, in these corporations.)

The same sources were used to check all nonfinancial corporations with assets over $14,023,000 for which Bureau of Internal Revenue data were available, to discover subsidiaries of the 250 largest corporations with total assets over the minimum. A compilation of total assets for each of the 250 largest corporations and its unconsolidated subsidiaries with assets over $14,023,000 was made. From this, the 200 largest corporations were selected, measuring size by the sum of the assets of each parent and its unconsolidated subsidiaries with assets over the minimum.

Essentially the same procedure was used for 1933, except that the minimum for unconsolidated subsidiaries was set at 10 million dollars (10 million dollars bearing the same relation to total assets in 1933 as $14,023,000 did to total assets in 1929), and the records of the Securities and Exchange Commission were used to supplement the other sources consulted.

An important exceptional case[4] should be noted. One large corporation, with assets of over three billion dollars, according to Moody's *Manuals*, did not submit a balance sheet in 1933. The procedure of searching through Bureau of Internal Revenue materials for corporations with large total assets failed to reveal a balance sheet for this corporation, although the corporation had submitted a return. Since the company did file a balance sheet in 1929, its absence from the 1933 list was conspicuous. Estimates of its 1933 balance-sheet items had been made by the Bureau of Internal Revenue by combining the balance-sheet items of its constituent companies, and these figures were used, as omission of the company and its subsidiaries would have caused a serious distortion in the total asset item for the 200 largest corporations—a difference of over 3 percent.

Comparison of the 1929 and 1933 lists of the 200 largest corporate units with each other as well as with the lists of the largest corporate units compiled directly from Moody's *Manuals* and discussed in Appendix 10 did not disclose any other case in which a very large corporation failed to file a balance sheet in the years mentioned. If a small company, near the lower limits set by the total assets criterion, failed to submit a balance sheet but was on a list compiled from other sources, it made little difference if it was omitted and another small company substituted. The discrepancy which may have been introduced in this way is undoubtedly smaller than the error which would have been involved in an estimate of the missing balance-sheet items for companies which did not submit them.

The lists therefore include:

(*a*) The 200 largest nonfinancial parent corporations in each year, chosen on the basis of total assets as shown by the consolidated returns, plus total assets of all unconsolidated subsidiaries with total assets over the minimum;

(*b*) Subsidiaries of the 200 largest parent corporations whose returns are consolidated with those of their parents. (Parent companies were allowed to submit consolidated returns for all subsidiaries over which they had 95 percent or more control, measured by ownership of voting stock, but this was not compulsory. As a result, some subsidiaries subject to 95–100 percent control are probably not included. Subsidiaries thus consolidated may be of any size, and the majority have smaller total assets than the minimum);

(*c*) Subsidiaries, showing assets greater than the minimum, which did not submit consolidated returns. Control of these by the parents ranged from 50 to 100 percent.

The procedure employed probably understates the 200 largest corporations, as no unconsolidated subsidiaries were included in the 200 unless balance sheets were submitted for them. That several such omissions were made is obvious from the most cursory search of Moody's *Manuals*. Other omissions may have been made because the information on stock control in the sources consulted did not reveal all the corporations which should have been classified as subsidiaries by the present definition. Where the subsidiary status of a company was doubtful, the error is deliberately on the side of conservatism. While the influence of missing companies is impossible to estimate accurately, the errors of omission were estimated to be very small.

[3] See p. 282 for an appraisal of the error thus introduced.

[4] A further exceptional case, in both 1929 and 1933, is that of a company which existed on paper only, representing a proposed merger through exchange of securities, of two large existing companies and their subsidiaries. Actually, the merger was never completed; for the purposes of this tabulation, however, the two independent companies were considered as active subsidiaries of an inactive parent (the paper company) which had no income statement or balance sheet apart from its subsidiaries. The two companies were operated as a unit.

From the discussion above it is evident that there may be one or two more or less than 200 corporations on the list. The former is likely if a corporation has been counted as a subsidiary which should have been considered independent. The latter is likely if a corporation has been counted as independent when it should have been considered a subsidiary of one of the corporations on the list. The error thus introduced is of slight importance. The ten smallest companies on the list contributed only 1.0 percent to total assets of the 200 in 1929, and 0.9 percent in 1933.[5] Omission or addition of one or two corporations at the very bottom of the list would therefore subtract or add a very small percentage of the total assets, and this percentage would be well within the range of error of the study. Similarly, if unconsolidated subsidiaries have been omitted because of missing balance sheets or insufficient information in the sources consulted, the choice of the 200 companies may have been affected. Again, the companies affected would probably be near the borderline, and the error would be insignificant. A rough guess puts the error due to these sources at something less than 2 percent, probably in the direction of understatement, as classification of the companies as subsidiaries was made as conservative as possible.

#### Classification by Industrial Group

The breakdown of the list of corporations into industrial groups can be compared with Bureau of Internal Revenue classification, as follows:

All nonfinancial corporations include corporations classified in *Statistics of Income* under the heading "Aggregate", less those classified under "Finance".

Manufacturing is classified by the same definition as "Total manufacturing" in *Statistics of Income*.

Transportation and other public utilities are classified by the same title in *Statistics of Income*. This classification has been broken down for the present tabulation according to the Bureau of Internal Revenue's subclassifications, "Transportation and related activities" and "Other public utilities", as shown in table 14 of the 1933 *Statistics of Income*.[6]

"Other nonfinancial corporations" include corporations classified in *Statistics of Income* under the headings "Agriculture and related industries," "Mining and quarrying", "Construction", "Trade", "Service", and "Nature of business not given."

The correspondence with the Bureau of Internal Revenue industrial classification was maintained for the calculation of concentration ratios.

Consolidated subsidiaries are, of course, subject to the industrial classification of their parents. This is true both for the tabulations of the 200 corporations and for *Statistics of Income*. Unconsolidated subsidiaries were tabulated for the 200 according to the industry of their parents. This is not true of the Bureau of Internal Revenue practice; for tax purposes these subsidiaries are independent and hence are classified independently. This difference in classification distorts the concentration ratios of the industrial groups by an unknown amount. No evidence of change in bias could be found over the period 1929–33.

The number of parent corporations in the 200 included in each industrial group in each year, and the corresponding information for unconsolidated subsidiaries, are shown in table I together with the percentage distribution of the corporations by industrial group.

TABLE I.—*Number and percentage distribution of returns of parents and unconsolidated subsidiaries tabulated for the 200 largest nonfinancial corporations, by industrial groups, 1929 and 1933* [1]

| | 200 largest nonfinancial corporations | | Manufacturing | | Transportation and other public utilities | | Transportation | | Other public utilities | | Other nonfinancial | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Number | Percent of 200 | Number | Percent of 200 | Number | Percent of 200 | Number | Percent of 200 | Number | Percent of 200 | Number | Percent of 200 |
| 1929 | | | | | | | | | | | | |
| Parents | 200 | 100 | 82 | 41.0 | 92 | 46.0 | 49 | 24.5 | 43 | 21.5 | 26 | 13.0 |
| Unconsolidated subsidiaries | 258 | 100 | 44 | 17.1 | 201 | 77.9 | 77 | 29.8 | 124 | 48.1 | 13 | 5.0 |
| All returns | 458 | 100 | 126 | 27.5 | 293 | 64.0 | 126 | 27.5 | 167 | 36.5 | 39 | 8.5 |
| 1933 | | | | | | | | | | | | |
| Parents | 200 | 100 | 78 | 39.0 | 96 | 48.0 | 48 | 24.0 | 48 | 24.0 | 26 | 13.0 |
| Unconsolidated subsidiaries | 280 | 100 | 53 | 18.9 | 218 | 77.9 | 96 | 34.3 | 122 | 43.6 | 9 | 3.2 |
| All returns | 480 | 100 | 131 | 27.3 | 314 | 65.4 | 144 | 30.0 | 170 | 35.4 | 35 | 7.3 |

[1] The 200 largest corporations in 1929 and 1933 are not identical. See preceding page.

#### The Items Tabulated

The items tabulated have been defined, where necessary, in footnotes to the tables. They are comparable to items in *Statistics of Income*. Further description follows:

(*a*) *Inventories.*—Although *Statistics of Income* shows a total for inventories for all corporations submitting balance sheets, the total does not represent comparable contributions from the various industrial groups, because of the different usage of the word "inventory" by them. Except for one classification, the term primarily signifies inventory to be sold. For transportation and other public utilities, the term is used primarily to represent inventory for use (actually working capital in the form of fuel supplies, reserves of equipment, etc.). For transportation and other public utilities it represents an asset item which is not comparable in economic significance to the same asset item for other industrial classifications.

(*b*) *Taxable investments.*—This item is comparable to the item "Investments other than tax-exempt" in *Statistics of Income*. Stocks of corporations were in-

[5] Four other items were investigated and showed substantially the same percent contribution for the 10 smallest corporations.

[6] The tables in *Statistics of Income* which were used to derive the concentration ratios did not have this breakdown. The necessary totals were taken from office worksheets of the Bureau of Internal Revenue.

cluded in this classification because the securities themselves were not tax-exempt. Dividends paid on these stocks to individuals were taxable. However, the tax laws did not require dividends to be included in the taxable income of a corporation in the period studied. Hence, "Taxable investments" includes all investments except the obligations of political units, although actually corporations did not pay income tax on dividends received from corporate stocks.

(*c*) *Miscellaneous assets.*—Miscellaneous assets is, for the 200 and for *Statistics of Income*, a remainder, derived by subtracting the specific asset items from total assets. When the balance-sheet statements are given in detail by a company, miscellaneous assets represents primarily good will and patent rights, and certain liquid assets not elsewhere listed. However, for those corporations which submit sketchy balance sheets, miscellaneous assets may contain in whole or in part asset items which should be reported elsewhere in the balance sheet. The figures tabulated are comparable to *Statistics of Income* for this item; the sole difficulty lies in interpreting the totals for the item.

(*d*) *Total assets less taxable investments.*—As has been mentioned, this item is considered more indicative of the assets controlled by a corporation than total assets. Total assets is subject to a heavy inflation because of security holdings of related corporations, but the worst part of this duplication of assets is removed by subtracting taxable investments. Further comment will be found in section 4.

(*e*) *Receipts.*—The item tabulated as receipts represents the combination of gross sales (where inventories are an income-determining factor) with receipts from other operations. This seems desirable because of the arbitrary division of these two items in *Statistics of Income*. According to Bureau of Internal Revenue practice, income of transportation and other public utilities, and of finance companies, is never classified as gross sales, no matter what the source, even when it results from sales of inventory. The difficulty of comparing receipts for the various industrial groups when the rigid Bureau of Internal Revenue practice is followed makes it advisable to sum the two items.

(*f*) *Income tax.*—It should be remembered that excess-profits taxes were not paid before 1933, and are therefore not included with income tax before that year. For 1933, the Federal income tax and the excess-profits tax were summed, as both are taxes on income. The tax thus paid is paid on an income larger than that revealed in the item tabulated as statutory net income less statutory net deficit in *Statistics of Income*.[7] The result of subtracting the deficit is to conceal the amount of income actually taxed.

(*g*) *Interest received from tax-exempt investments.*—The relation of this item to the actual holdings of tax-exempt investments as shown by balance sheets is not clear. The balance-sheet item represents the estimated values of holdings as of December 31. The interest recorded is an income item covering the whole year, and does not, of course, necessarily correspond to security holdings of a given date. It is, however, an absolute and measurable quantity, unlike the value of holdings of tax-exempt investments. The totals for the latter depend on the basis used for valuation.

Two other items included in the accompanying tables were derived from items recorded on tax returns and in *Statistics of Income*. A measure of the income from operations was derived by combining compiled net profit and interest paid, and subtracting from the result income tax, interest received on taxable investments, interest received on tax-exempt investments, and cash dividends received. This amounts to taxable (or statutory) net income, which is not tabulated, plus interest paid, less income tax, less interest received on taxable investments.

A measure of corporate savings was also derived. This equaled compiled net profit, less income and excess-profits taxes paid, less cash dividends paid. This item is frequently negative, showing that dividends were paid out of reserves, not out of current income.

#### Tabulation of the Bureau of Internal Revenue Data

The income-statement and balance-sheet items were tabulated for 1929 and 1933 for the 200 largest nonfinancial corporations by industrial group, and for their unconsolidated subsidiaries, arranged by the industrial group of the parent. Totals were computed for each item for each industrial group, and these were summed to give the total for the 200.

It should be emphasized that the records from which the tabulations were made were compiled from data available in the Statistical Section of the Income Tax Unit of the Bureau of Internal Revenue, which were compiled from unaudited returns. Tables in *Statistics of Income* are compiled from the same records, so there is no lack of comparability from this source. However, should the returns of large corporations be more likely to be subjected to change after auditing than the returns of smaller corporations, it becomes apparent that the totals from audited returns would show a much greater percentage change from the present totals for the 200 than for all nonfinancial corporations. No quantitative estimate of the shift can be made. In this case, it is probable that the concentration ratios for certain income items would be raised.

[7] The accompanying tables include compiled net profit or loss, which differs from statutory net income in that it includes interest on tax-exempt investments and dividends received. Statutory net income less statutory net deficit may easily be computed from the accompanying tables by subtracting tax-exempt interest and dividends received from compiled net profit or loss.

The totals from the tabulations for both years are presented in table II, for the 200 largest nonfinancial corporations, and in table III, for the 200, by industrial group.

**Adjustment of the Tabulated Totals for Unconsolidated Subsidiaries with Total Assets Below the Minimum**

It was explained above that all unconsolidated subsidiaries below certain sizes were intentionally omitted from the tabulations. From the present definition of subsidiary it is obvious that this omission understates the totals for the 200 largest corporations in both 1929 and 1933. Therefore, a method of adjusting for this omission was devised. A study of the frequency distributions of all unconsolidated subsidiaries tabulated by total asset class was made for total assets and capital assets in 1933. However, no definite configuration for the ends of the frequency curves could be inferred with certainty. The average of the next few asset classes above the minima for 1929 and 1933 was therefore used as a basis for estimating the totals for various items. The rest of the items were adjusted a similar percentage.[8]

These adjustments were expressed as increments and entered on tables II and III along with the adjusted and unadjusted totals.

**Adjustment of the Bureau of Internal Revenue Balance-Sheet Items for Corporations not Submitting Balance Sheets**

All corporations which submit income-tax returns file income statements. Hence the totals for income statement items for all nonfinancial corporations in *Statistics of Income* are complete. However, it is not compulsory to file balance sheets, and some companies do not. *Statistics of Income* totals for balance-sheet items must therefore be adjusted for this understatement. For 1931–33 income-statement items are available for all corporations submitting returns and all corporations submitting balance sheets. It was assumed that the percentage understatement for any balance-sheet item was the same as the percentage understatement (determined from *Statistics of Income*) for a related income-statement item. Special assumptions had to be made for transportation corporations and other public utilities for all years, and for all balance-sheet items in 1929 and 1930. These are fully discussed in section 2 of this appendix.

**Derivation and Interpretation of the Concentration Ratios**

The statistic designed to measure the concentration of control is called the *concentration ratio*. It is simply the ratio of the total for the 200 largest corporations to the total for all corporations expressed as a percent. The ratio is computed after the adjustments for missing balance sheets and for unconsolidated subsidiaries have been made. It was computed for all years, all items, and all industrial groups shown on the basic tables.

It should be remembered that this statistic measures not the concentration of ownership but the concentration of control in the 200 largest corporate units of the various income-statement and balance-sheet items. In some cases the concentration ratio is properly more than 100. This is true of net-income and profit figures where both negative and positive figures go into the totals; a concentration ratio greater than 100 shows that the 200 largest made more net income or profit than all corporations. Similarly in these items some negative concentration ratios appear. These arise from the application of the elementary rules for algebraic signs and they indicate that the total for the 200 largest has a different sign than the total for all corporations. The 200 report a loss, while all corporations as a group report a gain, or vice versa.

In some cases the concentration ratio is more than 100 in an item where negative figures are not possible. This inconsistency appears in cash dividends received and miscellaneous assets, and it indicates inaccurate data. Neither of these items yields concentration ratios of importance; they are used in the derivation of other figures whose concentration ratios are of significance. In each case the inaccurate figures contributed only a small percent to the total for the derived figures. Hence a moderate error in small items was translated into a small or insignificant error in a large item. Where a concentration ratio is more than 100 in an item having no negative values it is likely that the true concentration ratio is very large and a moderate error in the ratio suffices to raise it over 100 and give the appearance of extraordinary inaccuracy.

Where the concentration ratio is equal to 100 and the figures used to compute the ratio were small it is obvious that the ratio is equal to 100 plus or minus rounding errors. For example, where the estimated ratio comes out 10/10 (equal to 100 percent), the true ratio must be somewhere between 90.5 percent and 100 percent.

The concentration ratios in the two parts of table II are comparable; the relative concentration of control for the 200 largest corporations may be compared for 1929 and 1933. However, in table III the two parts are not comparable as measures of the degree of concentration for the several industrial groups in 1929 and 1933. In each case the totals for industrial groups are for all companies in that group on the list of the 200 largest. These numbers are not the same for 1929 and 1933. Table V was compiled to show the change in the degree of concentration by industrial groups for a

[8] See section 3.

*constant number* of corporations in each industrial group. This table is discussed below.

#### The Derivation of Table IV

Three important asset items were studied for the years 1930–32, as well as 1929 and 1933. Total assets, capital assets, and total assets less taxable investments were estimated for the intervening years from the tabulated totals for 1929 and 1933.

A chain index was computed for the period 1929–33 from data showing the percent change from year to year of a list of identical companies in each industrial group. This index was applied to the tabulated totals for each of the three items for each of the four industrial groups. The resulting estimates by industrial groups were summed to get the estimates for the 200 largest. Because of the inadequacy of the sample for taxable investments in the intervening years this item was not estimated separately. Total assets less taxable investments were estimated directly, using the same chain indexes as were used to estimate total assets.

The lists of the 200 largest corporations for the three interpolated years were never compiled, but the estimated totals are presented in table IV. The totals for 1929 and 1933 were adjusted for the omission of "small" unconsolidated subsidiaries before the interpolation was made. Consequently there is an implicit adjustment for the estimates of the intervening years, ranging between the adjustments of the end years.

The adjustment for missing balance sheets is made as described above. The concentration ratios are presented in the table and they show the movement over the 5-year period. The details of the interpolation are discussed in section 5 of this appendix.

#### The Derivation of Table V

It was pointed out in the section on the interpretation of the concentration ratios that the ratios for the industrial groups were not comparable for the 2 years shown in table III because of the changing number of corporations in the 200 largest that fell into each industrial group. This difficulty was overcome by deriving a new set of totals for 1929 and 1933 in which the same number of companies was used for each industrial group.[5a] This was done for the same three asset items as were shown in table IV.

These totals were corrected for the omission of unconsolidated subsidiaries with total assets below the minima for the 2 years. The same adjustment increment as was used for the industrial groups in table III was assumed to apply to these new tabulated totals. In other words, it was assumed that the subtraction of the few smallest corporations in each industrial group would not diminish the contribution of the unconsolidated subsidiaries with total assets below the minimum figure.

The adjusted totals by industrial groups for all corporations filing balance sheets, are the same figures as appear in table III. The concentration ratios are presented in table V and they are a measure of the degree of relative concentration for a constant number of corporations in each industrial group. They are comparable for the 2 years shown and they give an indication of the change in concentration of control within the industrial groups. As some corporations had to be discarded, these concentration ratios are not comparable with those in table III. The totals for the industrial groups in table III add up to the totals in table II. The totals for the industrial groups in table V do not add up to the totals for the 200 largest corporations in tables II and IV.

#### Accuracy of the Results

The general accuracy of the absolute figures and the concentration ratios cannot be stated in rigid terms. It is impossible to estimate the "standard error" or "likely error" quantitatively. All that can be said is that the evidence indicates that the error is less than a given amount. Most of the errors are not subject to a quantititative estimate at all. Some are beyond doubt "insignificant" compared to the others and have been labeled as such. The direction of errors is not always determinate. It cannot always be stated with any certainty whether a given set of errors is compensating or additive. Therefore the appraisal will be rough and the results will not be expressed in rigorous mathematical terms.

A few sources of error are of particular importance and will be discussed separately:

1. Errors in making up the list: The disagreement among the several sources used to determine the complete structure of each of the 250 largest corporations (from which the lists of 200 were derived) points to error in the lists of unconsolidated subsidiaries. In every case the indeterminate cases were decided on the side of understatement, so the totals for the 200 largest corporations and the concentration ratios are probably understated throughout. It is possible that these errors might run over 2 percent, but no reliable estimate of the size of the error can be made. There is no reason to believe that the error in 1929 is larger or smaller than that for 1933. Many of the doubtful cases occurred in both years and were treated identically so there seems to be little cause for bias over the period, in the totals for the 200 or in the concentration ratios.

2. Errors arising from the treatment of unconsoli-

[5a] The largest multiple of five that could be used. The actual companies were not necessarily identical for the 2 years. The discarded companies were the smallest ones in the industrial groups in the respective years.

dated subsidiaries with total assets below the minimum: The adjustments for this understatement were of the order of about one percent and were practically the same for 1929 and 1933. The adjustment was crudely estimated because the frequency distributions exhibited by unconsolidated subsidiaries were somewhat erratic.[9] There must have been some subsidiaries below the rather large minima in both years so the adjustment could not overstate as much as one percent. It would seem extravagant to estimate the error of overstatement from this cause at more than one-quarter of one percent of the adjusted totals for either year. On the other hand, there is no such well-defined limit to the possible understatement of the adjustment. There might have been a great number of corporations with total assets between one million and 10 or 14 millions of dollars. This circumstance might have raised the totals and hence the concentration ratios as much as 2 percent. There is no reason to expect that the totals for 1929 should be more or less in error than those for 1933.

3. Errors arising from adjustment for returns with missing balance sheets: There seemed to be little chance for the adjustment for missing balance sheets to introduce any significant error into the concentration ratios for the 200 largest corporations. The adjustments for 1929 and 1930 were derived indirectly and are less likely to be accurate than those for the later years. There is, however, reason to believe that the adjustment applied to the separate industrial groups involved a greater percentage error than in the case of the totals for all nonfinancial corporations. The adjustments for the transportation corporations and the other public utilities were estimated as were the adjustments for all industrial groups in 1929 and 1930.[10] The order of these adjustments was about 2 percent, although they range from 0.2 percent to 7.0 percent for different items. Taxable investments might be subject to 2-percent or possibly 3-percent error in 1929. On the other hand, it is unlikely that capital assets, total assets, or tax-exempt investments have as much as one-half of one percent error from this adjustment. Obviously, this error does not affect the totals for income items.

4. Errors arising from the criterion used to determine size: The use of total assets less taxable investments as a measure of size of corporations, instead of total assets, involved two ways of understating the totals for the 200, and the concentration ratios. The actual selection of the 200 largest corporations was made on the basis of size of total assets rather than total assets less taxable investments. It would be an unusual coincidence indeed if the 200 corporations which had the largest total assets were the same as the 200 corporations which had the largest total assets less taxable investments. Further, it should be pointed out, the elimination of *all* taxable investments seriously overcorrects,[11] since some of these investments are securities of corporations outside the corporate unit. The value of taxable investments is in the range of 25 percent of the total assets. Therefore an overstatement of some 10 percent (somewhat liberal, seemingly) in the taxable investments being subtracted would bring about a discrepancy of approximately 3⅓ percent in the total assets less taxable investments item.

5. Errors arising from the change in classification of subsidiaries: For the purpose of tabulation by industrial groups subsidiaries were classified by the industrial group of their parent, whereas the Bureau of Internal Revenue classifies each corporate return independently. The figures for some of the 200 largest corporations include assets of subsidiaries which belong to industrial groups other than those of their parents, hence the numerator and the denominator of the concentration ratio are not quite comparable as to industrial group. Naturally this error does not apply to the concentration ratios for the 200 largest corporations as a unit, except insofar as financial corporations may have been included as subsidiaries of the nonfinancial corporations in the 200.

6. Errors arising from interpretation of items affected by the consolidation of balance sheets: While there is no error involved in the computations or procedures, it is difficult to define precisely what some items mean. Some items were subject to double counting,[11] because complete consolidation was impossible, and there was no way of defining exactly what the totals represented. There might be a significant difference between the totals in the tables and corresponding totals for the "200 largest consolidated balance sheets", and this could be called the "error". This cannot be measured even approximately but it might well run up to 10 percent.

7. Errors in reading of the Bureau of Internal Revenue records: In some cases the records from which the tabulations were made were faded and worn so there was some danger of misreading figures for individual companies. The error here is not possible to estimate but is unlikely to be significant.

More detailed statements of the handling of certain errors are made in the other sections of this appendix. Special attention should be called to the remarks on the relative accuracy of the various items, industrial groups, and years.

No estimate of the combined error due to all causes can be attempted, but the general size of the likely error can be inferred roughly from the list enumerated above.

[9] See pp. 292, 282.
[10] See section 2.
[11] See section 4.

TABLE II.—*Derivation of the concentration ratios, and the totals for asset items and selected income-statement items for the 200 largest nonfinancial corporations, 1929 and 1933*

PART I. 1929

| | 200 largest nonfinancial corporations | | | All nonfinancial corporations | | | Concentration ratio: 200 largest to all nonfinancial corporations (percent) |
|---|---|---|---|---|---|---|---|
| | Tabulated totals | Adjustment for unconsolidated subsidiaries with total assets under $14,023,000 [a] | Adjusted totals | Corporations [1] submitting balance sheets | Adjustment of balance-sheet items for corporations not submitting balance sheets [b] | Totals with balance-sheet items adjusted | |
| | Millions of dollars | | | | | | |
| ASSET ITEMS | | | | | | | |
| Cash [2] | 2,886 | 29 | 2,915 | 7,900 | 161 | 8,061 | 36.2 |
| Inventories | 5,548 | 55 | 5,603 | 20,990 | 324 | 21,314 | 26.3 |
| Capital assets less reserve for depreciation and depletion | 57,497 | 854 | 58,351 | 98,627 | 2,002 | 100,629 | 58.0 |
| Tax-exempt investments [3] | 1,001 | 10 | 1,011 | 2,958 | 30 | 2,988 | 33.8 |
| Taxable investments | 13,710 | 78 | 13,788 | 21,824 | 601 | 22,425 | 61.5 |
| Notes and accounts receivable | 16,773 | 156 | 16,929 | 22,681 | 488 | 23,169 | 38.5 |
| Miscellaneous assets [4] | | | | 20,074 | 769 | 20,843 | |
| Total assets [5] | 97,415 | 1,182 | 98,597 | 195,054 | 4,375 | 199,429 | 49.4 |
| Total assets [5] less taxable investments | 83,705 | 1,104 | 84,809 | 173,230 | 3,774 | 177,004 | 47.9 |
| INCOME-STATEMENT ITEMS | | | | | | | |
| Gross receipts from sales and services [6] | 38,924 | 365 | 39,289 | | | 138,987 | 28.3 |
| Interest received from taxable investments | 538 | 3 | 541 | | | 1,066 | 50.8 |
| Interest received from tax-exempt investments [3] | 64 | 1 | 65 | | | 151 | 43.0 |
| Cash dividends received | 1,260 | 8 | 1,268 | | | 1,621 | 78.2 |
| Interest paid | 1,552 | 16 | 1,568 | | | 2,759 | 56.8 |
| Taxes other than income tax [7] | 884 | 9 | 893 | | | 1,729 | 51.6 |
| Income tax [8] | 415 | 4 | 419 | | | 971 | 43.2 |
| Depreciation and depletion | 1,703 | 22 | 1,725 | | | 4,117 | 41.9 |
| Cash dividends paid | 3,619 | 36 | 3,655 | | | 6,593 | 55.4 |
| Compiled net profit or loss [9] | 5,251 | 42 | 5,293 | | | 9,323 | 56.8 |
| Income derived from operations [10] | 4,526 | 42 | 4,568 | | | 8,273 | 55.2 |
| Corporate savings [11] | 1,217 | 2 | 1,219 | | | 1,759 | 69.3 |

PART II. 1933

| | 200 largest nonfinancial corporations | | | All nonfinancial corporations | | | Concentration ratio: 200 largest to all nonfinancial corporations (percent) |
|---|---|---|---|---|---|---|---|
| | Tabulated totals | Adjustment for unconsolidated subsidiaries with total assets under $10,000,000 | Adjusted totals | Corporations [1] submitting balance sheets | Adjustment of balance-sheet items for corporations not submitting balance sheets | Totals with balance-sheet items adjusted | |
| | Millions of dollars | | | | | | |
| ASSET ITEMS | | | | | | | |
| Cash [2] | 2,553 | 26 | 2,579 | 5,984 | 134 | 6,118 | 42.2 |
| Inventories | 3,829 | 38 | 3,867 | 13,458 | 170 | 13,628 | 28.4 |
| Capital assets less reserve for depreciation and depletion | 59,200 | 749 | 59,949 | 91,246 | 2,110 | 93,356 | 64.2 |
| Tax exempt investments [3] | 795 | 8 | 803 | 2,840 | 15 | 2,855 | 28.1 |
| Taxable investments | 17,668 | 86 | 17,754 | 24,687 | 1,046 | 25,733 | 69.0 |
| Notes and accounts receivable | 5,444 | 54 | 5,498 | 14,600 | 319 | 14,919 | 36.9 |
| Miscellaneous assets [4] | 5,153 | 14 | 5,167 | 9,916 | 1,196 | 11,112 | 46.5 |
| Total assets [5] | 94,642 | 975 | 95,617 | 162,731 | 4,990 | 167,721 | 57.0 |
| Total assets [5] less taxable investments | 76,975 | 888 | 77,863 | 138,044 | 3,944 | 141,988 | 54.8 |
| INCOME-STATEMENT ITEMS | | | | | | | |
| Gross receipts from sales and services [6] | 21,793 | 192 | 21,985 | | | 73,423 | 29.9 |
| Interest received from taxable investments | 359 | 2 | 361 | | | 563 | 64.1 |
| Interest received from tax-exempt investments [3] | 64 | 1 | 65 | | | 129 | 50.4 |
| Cash dividends received | 413 | 2 | 415 | | | 545 | 76.1 |
| Interest paid | 1,612 | 16 | 1,628 | | | 2,448 | 66.5 |
| Taxes other than income tax [7] | 893 | 9 | 902 | | | 1,716 | 52.6 |
| Income tax [8] and excess-profits tax | 140 | 1 | 141 | | | 387 | 36.4 |
| Depreciation and depletion | 1,612 | 21 | 1,633 | | | 3,449 | 47.3 |
| Cash dividends paid | 1,510 | 15 | 1,525 | | | 2,552 | 59.8 |
| Compiled net profit or loss [9] | 527 | 6 | 533 | | | 140 | 380.7 |
| Income derived from operations [10] | 1,163 | 16 | 1,179 | | | 964 | 122.3 |
| Corporate savings [11] | −1,123 | −10 | −1,133 | | | −2,799 | 40.5 |

For footnotes, see p. 289

TABLE III–A.— *Derivation of the concentration ratios, and the totals for asset items and selected income-statement items for manufacturing corporations in the 200 largest nonfinancial corporations and all manufacturing corporations, 1929 and 1933*

PART I, 1929

| | 82 largest manufacturing corporations | | | All manufacturing corporations | | | |
|---|---|---|---|---|---|---|---|
| | Tabulated totals | Adjustment for unconsolidated subsidiaries with total assets under $14,023,000 [2] | Adjusted totals | Corporations [1] submitting balance sheets | Adjustment of balance-sheet items for corporations not submitting balance sheets [1] | Totals with balance sheet items adjusted | Concentration ratio: 82 largest to all manufacturing corporations (percent) |
| | Millions of dollars | | | | | | |
| ASSET ITEMS | | | | | | | |
| Cash [4] | 1,355 | 14 | 1,369 | 3,847 | 39 | 3,886 | 35.2 |
| Inventories | 3,879 | 39 | 3,918 | 12,614 | 114 | 12,728 | 30.8 |
| Capital assets less reserve for depreciation and depletion | 11,640 | 163 | 11,803 | 28,235 | 226 | 28,461 | 41.5 |
| Tax-exempt investments [5] | 827 | 8 | 835 | 1,973 | 4 | 1,977 | 42.2 |
| Taxable investments | 4,516 | 25 | 4,541 | 7,181 | 87 | 7,268 | 62.5 |
| Notes and accounts receivable | 5,627 | 89 | 5,716 | 9,572 | 96 | 9,668 | 31.1 |
| Miscellaneous assets [6] | | | | 6,860 | 66 | 6,926 | |
| Total assets [3] | 27,844 | 338 | 28,182 | 70,282 | 632 | 70,914 | 39.7 |
| Total assets [3] less taxable investments | 23,327 | 314 | 23,641 | 63,101 | 545 | 63,646 | 37.1 |
| INCOME-STATEMENT ITEMS | | | | | | | |
| Gross receipts from sales and services [8] | 22,729 | 213 | 22,942 | | | 70,118 | 32.7 |
| Interest received from taxable investments | 235 | 1 | 236 | | | 459 | 51.4 |
| Interest received from tax-exempt investments | 35 | 0 | 35 | | | 92 | 38.0 |
| Cash dividends received | 427 | 3 | 430 | | | 584 | 73.6 |
| Interest paid | 279 | 3 | 282 | | | 712 | 39.6 |
| Taxes other than income tax [7] | 239 | 2 | 241 | | | 617 | 39.1 |
| Income tax [9] | 201 | 2 | 203 | | | 544 | 37.3 |
| Depreciation and depletion | 835 | 11 | 846 | | | 2,018 | 41.9 |
| Cash dividends paid | 1,556 | 16 | 1,572 | | | 3,159 | 49.8 |
| Compiled net profit or loss [2] | 2,430 | 19 | 2,449 | | | 5,081 | 48.2 |
| Income derived from operations [3] | 1,811 | 16 | 1,827 | | | 4,114 | 44.4 |
| Corporate savings [10] | 673 | 1 | 674 | | | 1,378 | 48.9 |

PART II, 1933

| | 78 largest manufacturing corporations | | | All manufacturing corporations | | | |
|---|---|---|---|---|---|---|---|
| | Tabulated totals | Adjustment for unconsolidated subsidiaries with total assets under $10,000,000 | Adjusted totals | Corporations [1] submitting balance sheets | Adjustment of balance-sheet items for corporations not submitting balance sheets | Totals with balance-sheet items adjusted | Concentration ratio: 78 largest to all manufacturing corporations (percent) |
| | Millions of dollars | | | | | | |
| ASSET ITEMS | | | | | | | |
| Cash [3] | 1,288 | 13 | 1,301 | 3,084 | 25 | 3,109 | 41.8 |
| Inventories | 2,604 | 26 | 2,630 | 8,084 | 65 | 8,149 | 32.3 |
| Capital assets less reserve for depreciation and depletion | 11,104 | 140 | 11,244 | 24,384 | 171 | 24,555 | 45.8 |
| Tax-exempt investments [5] | 605 | 6 | 611 | 1,983 | 4 | 1,987 | 30.7 |
| Taxable investments | 6,753 | 23 | 6,776 | 9,499 | 76 | 9,575 | 70.8 |
| Notes and accounts receivable | 2,900 | 29 | 2,929 | 6,764 | 54 | 6,818 | 43.0 |
| Miscellaneous assets [6] | 957 | 23 | 980 | 3,955 | 67 | 4,022 | 24.4 |
| Total assets [3] | 26,201 | 270 | 26,471 | 57,753 | 462 | 58,215 | 45.5 |
| Total assets [3] less taxable investments | 19,458 | 237 | 19,695 | 48,254 | 386 | 48,640 | 40.5 |
| INCOME-STATEMENT ITEMS | | | | | | | |
| Gross receipts from sales and services [8] | 11,465 | 101 | 11,566 | | | 34,213 | 33.8 |
| Interest received from taxable investments | 117 | 1 | 118 | | | 203 | 58.1 |
| Interest received from tax-exempt investments [3] | 41 | 0 | 41 | | | 80 | 51.2 |
| Cash dividends received | 106 | 1 | 107 | | | 160 | 66.9 |
| Interest paid | 209 | 2 | 211 | | | 460 | 45.9 |
| Taxes other than income tax [7] | 257 | 3 | 260 | | | 645 | 40.3 |
| Income tax [9] and excess-profits tax | 60 | 1 | 61 | | | 207 | 29.5 |
| Depreciation and depletion | 703 | 9 | 712 | | | 1,634 | 43.6 |
| Cash dividends paid | 596 | 6 | 602 | | | 1,170 | 51.5 |
| Compiled net profit or loss [2] | 305 | 3 | 308 | | | 444 | 69.4 |
| Income derived from operations [10] | 190 | 2 | 192 | | | 254 | 75.6 |
| Corporate savings [11] | −351 | −4 | −355 | | | −933 | 38.0 |

For footnotes, see p. 289

TABLE III–B.—*Derivation of the concentration ratios, and the totals for asset items and selected income-statement items for transportation and other public utility corporations in the 200 largest nonfinancial corporations and all transportation and other public utility corporations, 1929 and 1933*

PART I, 1929

| | 92 largest transportation and other public utility corporations | | | All transportation and other public utility corporations | | | Concentration ratio: 92 largest to all transportation and other public utility corporations (percent) |
|---|---|---|---|---|---|---|---|
| | Tabulated totals | Adjustment for unconsolidated subsidiaries with total assets under $14,023,000 [a] | Adjusted totals | Corporations [1] submitting balance sheets | Adjustment of balance-sheet items for corporations not submitting balance sheets [b] | Totals with balance-sheet items adjusted | |
| | Millions of dollars | | | | | | |
| ASSET ITEMS | | | | | | | |
| Cash [2] | 1,257 | 13 | 1,270 | 1,634 | 49 | 1,683 | 75.5 |
| Inventories | 939 | 9 | 948 | 1,119 | 0 | 1,119 | 84.7 |
| Capital assets less reserve for depreciation and depletion | 43,191 | 653 | 43,844 | 52,204 | 1,358 | 53,562 | 81.9 |
| Tax-exempt investments [3] | 101 | 1 | 102 | 287 | 21 | 308 | 33.1 |
| Taxable investments | 8,425 | 49 | 8,474 | 9,326 | 345 | 9,671 | 87.6 |
| Notes and accounts receivable | 10,200 | 53 | 10,253 | 3,974 | 119 | 4,093 | 74.4 |
| Miscellaneous assets [4] | | | | 9,248 | 442 | 9,690 | |
| Total assets [5] | 64,113 | 778 | 64,891 | 77,792 | 2,334 | 80,126 | 81.0 |
| Total assets [5] less taxable investments | 55,688 | 729 | 56,417 | 68,466 | 1,989 | 70,455 | 80.1 |
| INCOME-STATEMENT ITEMS | | | | | | | |
| Gross receipts from sales and services [6] | 11,900 | 112 | 12,012 | | | 14,834 | 81.0 |
| Interest received from taxable investments | 268 | 2 | 270 | | | 333 | 81.1 |
| Interest received from tax-exempt investments [3] | 23 | 0 | 23 | | | 29 | 79.3 |
| Cash dividends received | 779 | 5 | 784 | | | 832 | 94.2 |
| Interest paid | 1,202 | 12 | 1,214 | | | 1,452 | 83.6 |
| Taxes other than income tax [7] | 587 | 6 | 593 | | | 694 | 85.4 |
| Income tax [8] | 177 | 2 | 179 | | | 222 | 80.6 |
| Depreciation and depletion | 736 | 10 | 746 | | | 1,011 | 73.8 |
| Cash dividends paid | 1,757 | 18 | 1,775 | | | 2,093 | 84.8 |
| Compiled net profit or loss [9] | 2,434 | 19 | 2,453 | | | 2,763 | 88.8 |
| Income derived from operations [10] | 2,389 | 22 | 2,411 | | | 2,799 | 86.1 |
| Corporate savings [11] | 500 | −1 | 499 | | | 448 | 111.4 |

PART II, 1933

| | 96 largest transportation and other public utility corporations | | | All transportation and other public utility corporations | | | Concentration ratio: 96 largest to all transportation and other public utility corporations (percent) |
|---|---|---|---|---|---|---|---|
| | Tabulated totals | Adjustment for unconsolidated subsidiaries with total assets under $10,000,000 | Adjusted totals | Corporations submitting balance sheets | Adjustment of balance-sheet items for corporations not submitting balance sheets | Totals with balance-sheet items adjusted | |
| | Millions of dollars | | | | | | |
| ASSET ITEMS | | | | | | | |
| Cash [2] | 1,041 | 10 | 1,051 | 1,290 | 65 | 1,355 | 77.6 |
| Inventories | 638 | 6 | 644 | 741 | 0 | 741 | 86.9 |
| Capital assets less reserve for depreciation and depletion | 45,080 | 570 | 45,650 | 50,141 | 1,504 | 51,645 | 88.4 |
| Tax-exempt investments [3] | 85 | 1 | 86 | 186 | 7 | 193 | 44.6 |
| Taxable investments | 10,142 | 49 | 10,191 | 11,138 | 824 | 11,962 | 85.2 |
| Notes and accounts receivable | 1,878 | 19 | 1,897 | 2,210 | 113 | 2,323 | 81.7 |
| Miscellaneous assets [4] | 3,923 | −8 | 3,915 | 3,343 | 1,009 | 4,352 | 90.0 |
| Total assets [5] | 62,787 | 647 | 63,434 | 69,049 | 3,522 | 72,571 | 87.4 |
| Total assets [5] less taxable investments | 52,646 | 597 | 53,243 | 57,911 | 2,698 | 60,609 | 87.8 |
| INCOME-STATEMENT ITEMS | | | | | | | |
| Gross receipts from sales and services [6] | 7,543 | 66 | 7,609 | | | 9,769 | 77.9 |
| Interest received from taxable investments | 222 | 1 | 223 | | | 231 | 96.5 |
| Interest received from tax-exempt investments [3] | 18 | 0 | 18 | | | 19 | 94.7 |
| Cash dividends received | 292 | 2 | 294 | | | 311 | 94.5 |
| Interest paid | 1,349 | 13 | 1,362 | | | 1,553 | 87.7 |
| Taxes other than income tax [7] | 575 | 6 | 581 | | | 678 | 85.7 |
| Income tax [8] and excess-profits tax | 67 | 1 | 68 | | | 93 | 73.1 |
| Depreciation and depletion | 780 | 10 | 790 | | | 1,012 | 78.1 |
| Cash dividends paid | 832 | 8 | 840 | | | 1,000 | 84.0 |
| Compiled net profit or loss [9] | 182 | 2 | 184 | | | 244 | 75.4 |
| Income derived from operations [10] | 932 | 11 | 943 | | | 1,143 | 82.5 |
| Corporate savings [11] | −717 | −7 | −724 | | | −849 | 85.3 |

For footnotes, see p. 289.

TABLE III C.- *Derivation of the concentration ratios, and the totals for asset items and selected income-statement items for transportation corporations in the 200 largest nonfinancial corporations and all transportation corporations, 1929 and 1933*

PART I, 1929

| | 49 largest transportation corporations | | | All transportation corporations | | | |
|---|---|---|---|---|---|---|---|
| | Tabulated totals | Adjustment for unconsolidated subsidiaries with total assets under $14,023,000 [a] | Adjusted totals | Corporations submitting balance sheets | Adjustment of balance-sheet items for corporations not submitting balance sheets [1] | Totals with balance-sheet items adjusted | Concentration ratio: 49 largest to all transportation corporations (percent) |
| | Millions of dollars | | | | | | |
| ASSET ITEMS | | | | | | | |
| Cash [2] | 646 | 6 | 652 | (14) | (14) | (14) | (14) |
| Inventories | 460 | 5 | 465 | (14) | (14) | (14) | (14) |
| Capital assets less reserve for depreciation and depletion | 24,425 | 338 | 24,763 | (14) | (14) | (14) | (14) |
| Tax-exempt investments [3] | 71 | 1 | 72 | (14) | (14) | (14) | (14) |
| Taxable investments | 2,754 | 15 | 2,769 | (14) | (14) | (14) | (14) |
| Notes and accounts receivable | 6,712 | 57 | 6,769 | (14) | (14) | (14) | (14) |
| Miscellaneous assets [4] | | | | | | | |
| Total assets [5] | 31,768 | 422 | 35,190 | (14) | (14) | (14) | (14) |
| Total assets [5] less taxable investments | 32,014 | 407 | 32,421 | (14) | (14) | (14) | (14) |
| INCOME-STATEMENT ITEMS | | | | | | | |
| Gross receipts from sales and services [6] | 6,939 | 65 | 7,004 | | | 9,193 | 76.2 |
| Interest received from taxable investments | 120 | 1 | 121 | | | 157 | 77.1 |
| Interest received from tax-exempt investments [3] | 17 | 0 | 17 | | | 21 | 81.0 |
| Cash dividends received | 250 | 2 | 252 | | | 230 | |
| Interest paid | 640 | 6 | 646 | | | 778 | 83.0 |
| Taxes other than income tax [7] | 341 | 3 | 344 | | | 406 | 84.7 |
| Income tax [8] | 92 | 1 | 93 | | | 116 | 80.2 |
| Depreciation and depletion | 221 | 3 | 224 | | | 390 | 57.4 |
| Cash dividends paid | 574 | 6 | 580 | | | 741 | 78.3 |
| Compiled net profit or loss [9] | 1,099 | 9 | 1,108 | | | 1,230 | 90.1 |
| Income derived from operations [10] | 1,260 | 11 | 1,271 | | | 1,475 | 86.2 |
| Corporate savings [11] | 433 | 2 | 435 | | | 373 | 116.6 |

PART II, 1933

| | 48 largest transportation corporations | | | All transportation corporations | | | |
|---|---|---|---|---|---|---|---|
| | Tabulated totals | Adjustment for unconsolidated subsidiaries with total assets under $10,000,000 | Adjusted totals | Corporations [1] submitting balance sheets | Adjustment of balance-sheet items for corporations not submitting balance sheets | Totals with balance-sheet items adjusted | Concentration ratio: 48 largest to all transportation corporations (percent) |
| | Millions of dollars | | | | | | |
| ASSET ITEMS | | | | | | | |
| Cash [2] | 507 | 5 | 512 | 669 | 34 | 703 | 72.8 |
| Inventories | 280 | 3 | 283 | 358 | 0 | 358 | 79.1 |
| Capital assets less reserve for depreciation and depletion | 24,748 | 313 | 25,061 | 26,301 | 789 | 27,090 | 92.5 |
| Tax-exempt investments [3] | 40 | 0 | 40 | 114 | 5 | 119 | 33.6 |
| Taxable investments | 4,806 | 23 | 4,829 | 4,834 | 358 | 5,192 | 93.0 |
| Notes and accounts receivable | 458 | 5 | 463 | 598 | 30 | 628 | 73.7 |
| Miscellaneous assets [4] | 2,054 | −10 | 2,044 | 1,275 | 526 | 1,801 | (1) |
| Total assets [5] | 32,893 | 339 | 33,232 | 34,149 | 1,742 | 35,891 | 92.6 |
| Total assets [5] less taxable investments | 28,087 | 316 | 28,103 | 29,315 | 1,384 | 30,699 | 92.5 |
| INCOME-STATEMENT ITEMS | | | | | | | |
| Gross receipts from sales and services [6] | 3,681 | 32 | 3,713 | | | 5,222 | 71.1 |
| Interest received from taxable investments | 77 | 0 | 77 | | | 80 | 96.2 |
| Interest received from tax-exempt investments | 8 | 0 | 8 | | | 10 | 80.0 |
| Cash dividends received | 77 | 0 | 77 | | | 75 | |
| Interest paid | 672 | 7 | 679 | | | 744 | 91.3 |
| Taxes other than income tax [7] | 269 | 3 | 272 | | | 321 | 84.7 |
| Income tax [8] and excess-profits tax | 15 | 0 | 15 | | | 26 | 57.7 |
| Depreciation and depletion | 191 | 2 | 193 | | | 330 | 58.5 |
| Cash dividends paid | 141 | 1 | 142 | | | 193 | 73.6 |
| Compiled net profit or loss [9] | −150 | −2 | −152 | | | −207 | 73.4 |
| Income derived from operations | 345 | 5 | 350 | | | 346 | 101.2 |
| Corporate savings [11] | −306 | −3 | −309 | | | −426 | 72.5 |

For footnotes, see p. 286.

TABLE III–D.—*Derivation of the concentration ratios, and the totals for asset items and selected income statement items for public utility corporations other than transportation in the 200 largest nonfinancial corporations and all public utility corporations other than transportation, 1929 and 1933*

PART I, 1929

| | 43 largest public utility corporations | | | All public utility corporations | | | |
|---|---|---|---|---|---|---|---|
| | Tabulated totals | Adjustment for unconsolidated subsidiaries with total assets under $14,023,000 [a] | Adjusted totals | Corporations [1] submitting balance sheets | Adjustment of balance-sheet items for corporations not submitting balance sheets [b] | Totals with balance-sheet items adjusted | Concentration ratio: 43 largest to all public utility corporations (percent) |
| | Millions of dollars | | | | | | |
| ASSET ITEMS | | | | | | | |
| Cash [2] | 612 | 6 | 618 | (12) | (12) | (12) | (12) |
| Inventories | 478 | 5 | 483 | (12) | (12) | (12) | (12) |
| Capital assets less reserve for depreciation and depletion | 19,066 | 315 | 19,381 | (12) | (12) | (12) | (12) |
| Tax-exempt investments [3] | 29 | 0 | 29 | (12) | (12) | (12) | (12) |
| Taxable investments | 5,671 | 33 | 5,704 | (12) | (12) | (12) | (12) |
| Notes and accounts receivable | 3,488 | −3 | 3,485 | (12) | (12) | (12) | (12) |
| Miscellaneous assets [4] | | | | | | | |
| Total assets [5] | 29,344 | 356 | 29,700 | (12) | (12) | (12) | (12) |
| Total assets [5] less taxable investments | 23,673 | 322 | 23,996 | (12) | (12) | (12) | (12) |
| INCOME-STATEMENT ITEMS | | | | | | | |
| Gross receipts from sales and services [6] | 4,961 | 47 | 5,008 | | | 5,641 | 88.8 |
| Interest received from taxable investments | 148 | 1 | 149 | | | 176 | 84.7 |
| Interest received from tax-exempt investments [3] | 6 | 0 | 6 | | | 9 | 66.7 |
| Cash dividends received | 529 | 3 | 532 | | | 593 | 89.7 |
| Interest paid | 562 | 6 | 568 | | | 673 | 84.4 |
| Taxes other than income tax | 246 | 2 | 248 | | | 288 | 86.1 |
| Income tax [7] | 85 | 1 | 86 | | | 107 | 80.4 |
| Depreciation and depletion | 515 | 7 | 522 | | | 622 | 83.9 |
| Cash dividends paid | 1,184 | 12 | 1,196 | | | 1,352 | 88.5 |
| Compiled net profit or loss [9] | 1,335 | 11 | 1,346 | | | 1,533 | 87.8 |
| Income derived from operations [10] | 1,129 | 12 | 1,141 | | | 1,321 | 86.4 |
| Corporate savings [11] | 66 | −2 | 64 | | | 74 | 86.5 |

PART II, 1933

| | 48 largest public utility corporations | | | All public utility corporations | | | |
|---|---|---|---|---|---|---|---|
| | Tabulated totals | Adjustment for unconsolidated subsidiaries with total assets under $10,000,000 | Adjusted totals | Corporations [1] submitting balance sheets | Adjustment of balance-sheet items for corporations not submitting balance sheets | Totals with balance-sheet items adjusted | Concentration ratio: 48 largest to all public-utility corporations (percent) |
| | Millions of dollars | | | | | | |
| ASSET ITEMS | | | | | | | |
| Cash [2] | 534 | 5 | 539 | 621 | 31 | 652 | 82.7 |
| Inventories | 358 | 4 | 362 | 383 | 0 | 383 | 94.5 |
| Capital assets less reserve for depreciation and depletion | 20,332 | 257 | 20,589 | 23,840 | 715 | 24,555 | 83.8 |
| Tax-exempt investments [3] | 45 | 0 | 45 | 72 | 2 | 74 | 60.8 |
| Taxable investments | 5,336 | 26 | 5,362 | 6,304 | 466 | 6,770 | 79.2 |
| Notes and accounts receivable | 1,420 | 14 | 1,434 | 1,612 | 82 | 1,694 | 84.7 |
| Miscellaneous assets [4] | 1,869 | 2 | 1,871 | 2,068 | 484 | 2,552 | 73.3 |
| Total assets [5] | 29,894 | 308 | 30,202 | 34,900 | 1,780 | 36,680 | 82.3 |
| Total assets [5] less taxable investments | 24,559 | 281 | 24,840 | 28,596 | 1,314 | 29,910 | 83.0 |
| INCOME-STATEMENT ITEMS | | | | | | | |
| Gross receipts from sales and services [6] | 3,862 | 34 | 3,896 | | | 4,547 | 85.7 |
| Interest received from taxable investments | 145 | 1 | 146 | | | 151 | 96.7 |
| Interest received from tax-exempt investments [3] | 9 | 0 | 9 | | | 9 | [13] 100.0 |
| Cash dividends received | 215 | 1 | 216 | | | 235 | 91.9 |
| Interest paid | 677 | 7 | 684 | | | 809 | 84.5 |
| Taxes other than income tax [8] | 306 | 3 | 309 | | | 357 | 86.6 |
| Income tax [8] and excess-profits tax | 52 | 1 | 53 | | | 66 | 80.3 |
| Depreciation and depletion | 589 | 8 | 597 | | | 682 | 87.5 |
| Cash dividends paid | 691 | 7 | 698 | | | 807 | 86.5 |
| Compiled net profit or loss [9] | 332 | 4 | 336 | | | 451 | 74.5 |
| Income derived from operations [10] | 588 | 8 | 596 | | | 799 | 74.6 |
| Corporate savings [11] | −411 | −4 | −415 | | | −422 | 98.3 |

For footnotes, see p. 289.

TABLE III E.—*Derivation of the concentration ratios, and the totals for asset items and selected income-statement items for "other" corporations in the 200 largest nonfinancial corporations and all "other" nonfinancial corporations 1929 and 1933*

PART I, 1929

| | 26 largest "other" corporations | | | All "other" nonfinancial corporations | | | |
|---|---|---|---|---|---|---|---|
| | Tabulated total | Adjustment for unconsolidated subsidiaries with total assets under $14,023,000 [a] | Adjusted total | Corporations [1] submitting balance sheets | Adjustment of balance-sheet items for corporations not submitting balance sheets [2] | Totals with balance-sheet items adjusted | Concentration ratio: 26 largest to all "other" nonfinancial corporations (percent) |
| | Millions of dollars | | | | | | |
| **ASSET ITEMS** | | | | | | | |
| Cash [3] | 274 | 3 | 277 | 2,419 | 73 | 2,692 | 11.1 |
| Inventories | 730 | 7 | 737 | 7,257 | 210 | 7,467 | 9.9 |
| Capital assets less reserve for depreciation and depletion | 2,666 | 38 | 2,704 | 18,188 | 418 | 18,606 | 14.5 |
| Tax-exempt investments [3] | 73 | 1 | 74 | 698 | 5 | 703 | 10.5 |
| Taxable investments | 769 | 4 | 773 | 5,316 | 170 | 5,486 | 14.1 |
| Notes and accounts receivable | 946 | 13 | 959 | 9,134 | 274 | 9,408 | 7.0 |
| Miscellaneous assets [4] | | | | 3,968 | 259 | 4,227 | |
| Total assets [5] | 5,458 | 66 | 5,524 | 46,980 | 1,409 | 48,389 | 11.4 |
| Total assets [5] less taxable investments | 4,680 | 61 | 4,751 | 41,664 | 1,239 | 42,903 | 11.1 |
| **INCOME-STATEMENT ITEMS** | | | | | | | |
| Gross receipts from sales and services [6] | 4,296 | 40 | 4,336 | | | 54,034 | 8.0 |
| Interest received from taxable investments | 35 | 0 | 35 | | | 275 | 12.7 |
| Interest received from tax-exempt investments | 6 | 1 | 6 | | | 30 | 20.0 |
| Cash dividends received | 54 | 0 | 54 | | | 206 | 26.2 |
| Interest paid | 71 | 1 | 72 | | | 596 | 12.1 |
| Taxes other than income tax [7] | 58 | 1 | 59 | | | 418 | 14.1 |
| Income tax [8] | 37 | 0 | 37 | | | 204 | 18.1 |
| Depreciation and depletion | 132 | 2 | 134 | | | 1,088 | 12.3 |
| Cash dividends paid | 305 | 3 | 308 | | | 1,341 | 23.0 |
| Compiled net profit or loss [9] | 387 | 3 | 390 | | | 1,478 | 26.4 |
| Income derived from operations [10] | 326 | 4 | 330 | | | 1,350 | 24.3 |
| Corporate savings [11] | 45 | 0 | 45 | | | −67 | (12) −67.2 |

PART II, 1933

| | 26 largest "other" corporations | | | All "other" nonfinancial corporations | | | |
|---|---|---|---|---|---|---|---|
| | Tabulated totals | Adjustment for unconsolidated subsidiaries with total assets under $10,000,000 | Adjusted total | Corporations [1] submitting balance sheets | Adjustment of balance-sheet items for corporations not submitting balance sheets | Totals with balance-sheet items adjusted | Concentration ratio: 26 largest to all "other" nonfinancial corporations (percent) |
| | Millions of Dollars | | | | | | |
| **ASSET ITEMS** | | | | | | | |
| Cash [3] | 224 | 2 | 225 | 1,610 | 43 | 1,653 | 13.7 |
| Inventories | 587 | 6 | 593 | 4,631 | 107 | 4,738 | 12.5 |
| Capital assets less reserve for depreciation and depletion | 3,016 | 38 | 3,054 | 16,721 | 435 | 17,156 | 17.8 |
| Tax-exempt investments [3] | 105 | 1 | 106 | 671 | 4 | 675 | 15.7 |
| Taxable investments | 783 | 4 | 787 | 4,050 | 146 | 4,196 | 18.8 |
| Notes and accounts receivable | 666 | 7 | 673 | 5,626 | 152 | 5,778 | 11.6 |
| Miscellaneous assets [4] | 273 | 0 | 273 | 2,620 | 119 | 2,739 | 10.0 |
| Total assets [5] | 5,654 | 58 | 5,712 | 35,929 | 1,006 | 36,935 | 15.5 |
| Total assets [5] less taxable investments | 4,871 | 54 | 4,925 | 31,879 | 859 | 32,739 | 15.0 |
| **INCOME-STATEMENT ITEMS** | | | | | | | |
| Gross receipts from sales and services [6] | 2,785 | 25 | 2,810 | | | 29,442 | 9.5 |
| Interest received from taxable investments | 20 | 0 | 20 | | | 128 | 15.6 |
| Interest received from tax-exempt investments [3] | 5 | 0 | 5 | | | 31 | 16.1 |
| Cash dividends received | 15 | 0 | 15 | | | 73 | 20.5 |
| Interest paid | 54 | 1 | 55 | | | 434 | 12.7 |
| Taxes other than income tax [7] | 61 | 1 | 62 | | | 393 | 15.8 |
| Income tax [8] and excess-profits tax | 13 | 0 | 13 | | | 87 | 14.9 |
| Depreciation and depletion | 129 | 2 | 131 | | | 805 | 16.3 |
| Cash dividends paid | 82 | 1 | 83 | | | 383 | 21.7 |
| Compiled net profit or loss [9] | 40 | 0 | 40 | | | −548 | (10) −7.2 |
| Income derived from operations [10] | 41 | 1 | 42 | | | −433 | (10) −9.7 |
| Corporate savings [11] | −55 | −1 | −56 | | | −1,018 | 5.5 |

[a] For reason and methods for adjusting unconsolidated subsidiaries with total assets under the specified minimum, see section 3 of this appendix.

[1] For reason and methods for adjusting balance-sheet items for corporations not submitting balance sheets, see section 2 of this appendix.

[2] Source: *Statistics of Income*.

[3] Includes cash in till and deposits in bank.

[4] Includes obligations of States and Territories or minor political subdivisions, securities issued under the Federal Farm Loan Act, and obligations of the United States or its possessions.

[5] Largely composed of goodwill, patent rights, copyrights, etc.

[6] Reserves for depreciation and depletion are deducted from total assets, as well as from capital assets.

[7] Sum of gross sales where inventories are an income-determining factor and gross receipts from operations where inventories are not an income-determining factor.

[8] Taxes paid, other than Federal income and excess-profit taxes.

[9] Federal income tax, plus excess-profits tax in 1933.

[10] Statutory net income or deficit, plus interest on tax-exempt investments, plus dividends from domestic corporations, which are also nontaxable income.

[11] Compiled net profit, plus interest paid, less income tax, less interest received on taxable investments, less interest received on tax-exempt investments, less cash dividends received. This amounts to statutory net income, plus interest paid, less income tax, less interest received on taxable investments.

[12] Compiled net profit, less income and excess-profit taxes paid, less cash dividends paid.

... Not available.

[13] See p. 281 et seq. of the text.

TABLE IV.—*Derivation of concentration ratios from the totals for the 200 largest and all nonfinancial corporations, selected asset items, 1929–33*

[Money figures in millions of dollars]

| | 1929 | 1930 | 1931 | 1932 | 1933 |
|---|---|---|---|---|---|
| TOTAL ASSETS [1] | | | | | |
| 200 largest nonfinancial corporations | 98,597 | 107,073 | 101,662 | 96,690 | 95,617 |
| All other nonfinancial corporations [2] | 100,832 | 91,258 | 76,766 | 77,560 | 72,104 |
| Total nonfinancial corporations | 199,429 | 198,331 | 178,428 | 174,250 | 167,721 |
| Concentration ratio: 200 largest to all nonfinancial corporations (percent) | 49.4 | 54.0 | 57.0 | 55.5 | 57.0 |
| TOTAL ASSETS [1] LESS TAXABLE INVESTMENTS | | | | | |
| 200 largest nonfinancial corporations | 84,809 | 91,364 | 85,169 | 79,916 | 77,863 |
| All other nonfinancial corporations [2] | 92,195 | 76,846 | 68,175 | 65,973 | 64,125 |
| Total nonfinancial corporations | 177,004 | 168,210 | 153,344 | 145,889 | 141,988 |
| Concentration ratio: 200 largest to all nonfinancial corporations (percent) | 47.9 | 54.3 | 55.5 | 54.8 | 54.8 |
| CAPITAL ASSETS LESS RESERVE FOR DEPRECIATION AND DEPLETION | | | | | |
| 200 largest nonfinancial corporations | 58,351 | 62,709 | 62,658 | 60,540 | 59,949 |
| All other nonfinancial corporations [2] | 42,278 | 41,628 | 36,368 | 35,404 | 33,407 |
| Total nonfinancial corporations | 100,629 | 104,337 | 99,026 | 95,944 | 93,356 |
| Concentration ratio: 200 largest to all nonfinancial corporations (percent) | 58.0 | 60.1 | 63.3 | 63.1 | 64.2 |

For footnotes, see p. 291.

TABLE V–A.—*Derivation of concentration ratios from the totals for the 75 largest and all manufacturing corporations, selected asset items, 1929 and 1933*

[Money figures in millions of dollars]

| | 1929 | 1933 |
|---|---|---|
| TOTAL ASSETS [1] | | |
| 75 largest manufacturing corporations | 27,495 | 26,235 |
| All other manufacturing corporations [2] | 43,419 | 31,980 |
| Total manufacturing corporations | 70,914 | 58,215 |
| Concentration ratio: 75 largest to all manufacturing corporations (percent) | 38.8 | 45.1 |
| TOTAL ASSETS [1] LESS TAXABLE INVESTMENTS | | |
| 75 largest manufacturing corporations | 23,064 | 19,549 |
| All other manufacturing corporations [2] | 40,582 | 29,091 |
| Total manufacturing corporations | 63,646 | 48,640 |
| Concentration ratio: 75 largest to all manufacturing corporations (percent) | 36.2 | 40.2 |
| CAPITAL ASSETS LESS RESERVE FOR DEPRECIATION AND DEPLETION | | |
| 75 largest manufacturing corporations | 11,534 | 11,178 |
| All other manufacturing corporations [2] | 16,927 | 13,377 |
| Total manufacturing corporations | 28,461 | 24,555 |
| Concentration ratio: 75 largest to all manufacturing corporations (percent) | 40.5 | 45.5 |

For footnotes, see p. 291.

TABLE V–B.—*Derivation of the concentration ratios from the totals for the 85 largest and all transportation and other public utility corporations selected asset items 1929 and 1933*

[Money figures in millions of dollars]

| | 1929 | 1933 |
|---|---|---|
| TOTAL ASSETS [1] | | |
| 85 largest transportation and other public utility corporations | 64,116 | 62,303 |
| All other transportation and other public utility corporations [2] | 16,010 | 10,268 |
| Total transportation and other public utility corporations | 80,126 | 72,571 |
| Concentration ratio: 85 largest to all transportation and other public utility corporations (percent) | 80.0 | 85.9 |
| TOTAL ASSETS [1] LESS TAXABLE INVESTMENTS | | |
| 85 largest transportation and other public utility corporations | 55,663 | 52,197 |
| All other transportation and other public utility corporations [2] | 14,792 | 8,412 |
| Total transportation and other public utility corporations | 70,455 | 60,609 |
| Concentration ratio: 85 largest to all transportation and other public utility corporations (percent) | 79.0 | 86.1 |
| CAPITAL ASSETS LESS RESERVE FOR DEPRECIATION AND DEPLETION | | |
| 85 largest transportation and other public utility corporations | 43,460 | 44,767 |
| All other transportation and other public utility corporations [2] | 10,102 | 6,878 |
| Total transportation and other public utility corporations | 53,562 | 51,645 |
| Concentration ratio: 85 largest to all transportation and other public utility corporations (percent) | 81.1 | 86.7 |

For footnotes, see p. 291.

TABLE V–C.—*Derivation of concentration ratios from the totals for the 45 largest and all transportation corporations, selected asset items, 1929 and 1933*

[Money figures in millions of dollars]

| | 1929 | 1933 |
|---|---|---|
| TOTAL ASSETS [1] | | |
| 45 largest transportation corporations | 34,749 | 32,976 |
| All other transportation corporations [2] | (3) | 2,915 |
| Total transportation corporations | (3) | 35,891 |
| Concentration ratio: 45 largest to all transportation corporations (percent) | (3) | 91.9 |
| TOTAL ASSETS [1] LESS TAXABLE INVESTMENTS | | |
| 45 largest transportation corporations | 31,991 | 28,152 |
| All other transportation corporations [2] | (3) | 2,547 |
| Total transportation corporations | (3) | 30,699 |
| Concentration ratio: 45 largest to all transportation corporations (percent) | (3) | 91.7 |
| CAPITAL ASSETS LESS RESERVE FOR DEPRECIATION AND DEPLETION | | |
| 45 largest transportation corporations | 24,079 | 24,826 |
| All other transportation corporations [2] | (3) | 2,264 |
| Total transportation corporations | (3) | 27,090 |
| Concentration ratio: 45 largest to all transportation corporations (percent) | (3) | 91.6 |

For footnotes, see p. 291.

TABLE V–D.—*Derivation of concentration ratios from the totals for the 40 largest and all public utility corporations other than transportation, selected asset items, 1929 and 1933*

[Money figures in millions of dollars]

| | 1929 | 1933 |
|---|---|---|
| TOTAL ASSETS [1] | | |
| 40 largest public utility corporations | 29,367 | 29,327 |
| All other public utility corporations [2] | (3) | 7,353 |
| Total public utility corporations | (3) | 36,680 |
| Concentration ratio: 40 largest to all public utility corporations (percent) | (3) | 80.0 |
| TOTAL ASSETS [1] LESS TAXABLE INVESTMENTS | | |
| 40 largest public utility corporations | 23,672 | 24,045 |
| All other public utility corporations [2] | (3) | 5,864 |
| Total public utility corporations | (3) | 29,909 |
| Concentration ratio: 40 largest to all public utility corporations (percent) | (3) | 80.4 |
| CAPITAL ASSETS LESS RESERVE FOR DEPRECIATION AND DEPLETION | | |
| 40 largest public utility corporations | 19,381 | 19,941 |
| All other public utility corporations [2] | (3) | 4,614 |
| Total public utility corporations | (3) | 24,555 |
| Concentration ratio: 40 largest to all public utility corporations (percent) | (3) | 81.2 |

TABLE V–E.—*Derivation of concentration ratios from the totals for the 25 largest and all "other" nonfinancial corporations, selected asset items, 1929 and 1933*

[Money figures in millions of dollars]

| | 1929 | 1933 |
|---|---|---|
| TOTAL ASSETS [1] | | |
| 25 largest "other" corporations | 5,122 | 5,618 |
| All remaining "other" corporations [2] | 42,967 | 31,317 |
| Total "other" corporations | 48,089 | 36,935 |
| Concentration ratio: 25 largest to all "other" corporations (percent) | 11.2 | 15.2 |
| TOTAL ASSETS [1] LESS TAXABLE INVESTMENTS | | |
| 25 largest "other" corporations | 4,667 | 4,836 |
| All remaining "other" corporations [2] | 38,236 | 27,903 |
| Total "other" corporations | 42,903 | 32,739 |
| Concentration ratio: 25 largest to all "other" corporations (percent) | 10.9 | 14.8 |
| CAPITAL ASSETS LESS RESERVE FOR DEPRECIATION AND DEPLETION | | |
| 25 largest "other" corporations | 2,652 | 2,978 |
| All remaining "other" corporations [2] | 15,954 | 14,178 |
| Total "other" corporations | 18,606 | 17,156 |
| Concentration ratio: 25 largest to all "other" corporations (percent) | 14.3 | 17.4 |

[1] Reserves for depreciation and depletion have been deducted from total assets as well as from capital assets.
[2] This is derived by deducting the totals for the 200 from the totals for all corporations.
[3] Not available.

## 2. Adjustment for Corporations Not Submitting Balance Sheets

The totals, by industrial groups, for all corporations submitting income-tax returns were available for income-statement items but not for balance-sheet items. The balance-sheet items for all corporations were derived from the totals for corporations submitting balance sheets by making a simple assumption: That the proportion understated in the balance-sheet item equals the proportion understated in a related income-statement item. The procedure for adjustment was as follows:

[11a] Though this is a very crude procedure, the error introduced in the final results is not significant because, for the income-statement items, at least 95 percent of the total was covered by the returns of corporations submitting balance sheets, in practically all cases.

Each balance-sheet item was paired with the income-statement item most closely related to it.[11a] The paired list used was:

| Balance-sheet item: | Income-statement item: |
|---|---|
| Cash. | Receipts. |
| Inventories. | Gross sales. |
| Tax-exempt investments. | Tax-exempt interest. |
| Taxable investments. | Dividends received. |
| Capital assets. | Depreciation and depletion. |
| Total assets. | Total compiled receipts. |

The basic assumption for the first pair of items is that the ratio:

$$\frac{\text{All receipts}}{\text{Receipts reported for corporations submitting balance sheets}}$$

is equal to the ratio:

$$\frac{\text{All cash}}{\text{Cash reported by all corporations submitting balance sheets.}}$$

The first ratio is computed from figures published in *Statistics of Income*. It is called the adjustment ratio and is shown by industrial groups in table VI.

TABLE VI.—*Adjustment factors applied to selected asset items for corporations not submitting balance sheets, all nonfinancial corporations, by industrial groups, 1929–33*

| | All nonfinancial corporations | Manufacturing corporations | Transportation and other public utility corporations | Transportation corporations | Other public utility corporations | All other nonfinancial corporations |
|---|---|---|---|---|---|---|
| Total assets: | | | | | | |
| 1929 | 1.022 | 1.009 | 1.030 | (1) | (1) | 1.030 |
| 1930 | 1.022 | 1.009 | 1.030 | 1.030 | 1.030 | 1.030 |
| 1931 | 1.017 | 1.013 | 1.009 | 1.009 | 1.009 | 1.038 |
| 1932 | 1.029 | 1.006 | 1.049 | 1.049 | 1.049 | 1.027 |
| 1933 | 1.031 | 1.008 | 1.051 | 1.051 | 1.051 | 1.028 |
| Taxable investments: | | | | | | |
| 1929 | 1.028 | 1.012 | 1.037 | (1) | (1) | 1.032 |
| 1930 | 1.029 | 1.012 | 1.037 | 1.037 | 1.037 | 1.034 |
| 1931 | 1.013 | 1.012 | 1.006 | 1.006 | 1.006 | 1.032 |
| 1932 | 1.034 | 1.002 | 1.059 | 1.059 | 1.059 | 1.035 |
| 1933 | 1.042 | 1.008 | 1.074 | 1.074 | 1.074 | 1.036 |
| Total assets less taxable investments: | | | | | | |
| 1929 | 1.022 | 1.009 | 1.029 | (1) | (1) | 1.030 |
| 1930 | 1.021 | 1.009 | 1.028 | 1.028 | 1.028 | 1.029 |
| 1931 | 1.018 | 1.013 | 1.010 | 1.010 | 1.010 | 1.039 |
| 1932 | 1.028 | 1.007 | 1.047 | 1.047 | 1.047 | 1.026 |
| 1933 | 1.029 | 1.008 | 1.047 | 1.047 | 1.047 | 1.027 |
| Capital assets: | | | | | | |
| 1929 | 1.020 | 1.008 | 1.026 | (1) | (1) | 1.023 |
| 1930 | 1.021 | 1.008 | 1.026 | 1.026 | 1.026 | 1.026 |
| 1931 | 1.014 | 1.009 | 1.011 | 1.011 | 1.011 | 1.031 |
| 1932 | 1.022 | 1.006 | 1.029 | 1.029 | 1.029 | 1.023 |
| 1933 | 1.023 | 1.007 | 1.030 | 1.030 | 1.030 | 1.026 |

[1] Balance-sheet items for transportation and other public utilities were not broken down in 1929, so no adjustment factor was used.

Transportation companies and other public utilities are reported together in *Statistics of Income*, but are separable on work sheets of the Bureau of Internal Revenue for all years except 1929. However, income-statement items for corporations submitting balance sheets were not available in separable form, so the adjustment ratio was determined for the two industrial groups combined and applied to the two combined and separately. In no case could the income-statement items for corporations submitting balance sheets be obtained for 1929 or 1930 so the adjustment ratios

shown on the table were estimated from the adjustment ratios of other years.

No adjustment ratio was computed for all corporations together.[12] The adjustment increments for each year for each industrial group were computed and are shown for 2 years on tables II and III with the adjusted and unadjusted items. On these tables the adjustment increments of all the industrial groups are summed to get the adjustment increment for all corporations for each item.

A test was devised for the internal consistency of the balance-sheet part of this set of adjustments in each unit of tables II and III. Miscellaneous assets is derived by subtraction, to make the total assets equal to the sum of the several asset items. This is true of both the adjusted and the unadjusted columns, so miscellaneous assets can be assigned an adjustment increment such that the table will be internally consistent. A test of the reasonableness of the set of adjustments may be based on the reasonableness of the adjustment for miscellaneous assets. If it is negative, or large compared to unadjusted miscellaneous assets, then the adjustments for either the total assets, or the other asset items, or both, are in some measure unreasonable, and this inconsistency is magnified in the residual item. If the adjustment is positive and reasonably small the system of adjustments is consistent; the adjustments are accurate or the errors are compensating.

The inferred adjustments for miscellaneous assets are presented in convenient form in table VII. From the table it is evident that the adjustments for 1933 were less consistent than those for 1929 and that the inaccuracies in 1933 were largely traceable to the transportation and other public utility groups.

TABLE VII.—*Inferred adjustment for miscellaneous assets—test for internal consistency*

| *Industrial group and year* | *Percent adjusted* |
|---|---|
| All industrial groups: | |
| 1929 | 3. 8 |
| 1933 | 11. 3 |
| Manufacturing: | |
| 1929 | 1. 0 |
| 1933 | 0. 7 |
| Transportation and other public utilities: | |
| 1929 | 4. 8 |
| 1933 | 30. 2 |
| Transportation: | |
| 1929 | |
| 1933 | 41. 3 |
| Other public utilities: | |
| 1929 | |
| 1933 | 23. 4 |
| Other corporations: | |
| 1929 | 8. 7 |
| 1933 | 4. 5 |

### 3. Adjustment For Omission of Unconsolidated Subsidiaries With Total Assets Below the Minimum

In order to cut down the amount of clerical work it was necessary to omit all corporations subsidiary to the 200 largest whose total assets were less than $10,000,000 in 1933. An analogous minimum had to be found for 1929 to correspond to $10,000,000 in 1933, in view of the changing value of the dollar and the changing size of corporations.

The procedure was as follows:

A sample of 20 corporations with total assets in 1933 between 10 and 11 million dollars was taken, in correct proportion for industrial groups. For these the ratio of total assets less taxable investments to total assets was computed. After multiplying by $10,000,000, the total assets less taxable investments of a representative $10,000,000 firm was obtained. Then for all companies in *Statistics of Income* the ratio of total assets less taxable investments, 1929 to 1933, was obtained. Next, this ratio was multiplied by total assets less taxable investments for a typical $10,000,000 corporation in 1933, yielding a figure for total assets less taxable investments for a typical analogous firm in 1929. Then, for 1929, a sample of firms with total assets of 12 to 13 millions of dollars[12a] was chosen and a ratio of total assets less taxable investments to total assets was computed. This was applied to the last figure derived above, and a new minimum figure for total assets was obtained for 1929. This was computed at $14,023,000.

This minimum defined a similar number of returns in the 2 years. Roughly estimated, the total number of corporations submitting balance sheets with total assets over the minimum was 1,175 in 1929 and 1,100 in 1933.

The omission of all "small" unconsolidated subsidiaries would have had a significant effect; the concentration ratios would have been understated. The different minimum sizes of total assets were designed to eliminate any possible bias over time due to the size of unconsolidated subsidiaries included in the totals for the 200 largest nonfinancial corporations.

There is no reliable method for accurately correcting for this omission short of an exhaustive search for, and tabulation of, the smaller corporations. A study was made of the frequency distributions of all unconsolidated subsidiaries for total assets and capital assets, by total asset classes. No tendency was well enough

[12] Under certain special conditions the same procedure could have been followed for all corporations as a unit, as well as by industrial group, without introducing a discrepancy. For the adjustment to be internally consistent the sum of all the industrial groups should equal the total of all nonfinancial corporations after the adjustment as well as before. This would be so if and only if the percent distribution (by industrial groups) of the figures for firms submitting balance sheets (for the item to be adjusted) were *exactly equal* to the corresponding percent distribution for the firms submitting balance sheets for the paired income-statement item. This procedure was followed using five significant places in the percent distribution, and the difference between the adjusted total and the sum of the adjusted industrial groups was something less than one half of one percent, on the average.

[12a] The estimated figure for total assets less taxable investments for a typical analogous firm in 1929.

defined to estimate the effect of unconsolidated subsidiaries below the minimum for either 1929 or 1933. Therefore, an approximate adjustment had to suffice; and a simple one was designed.

It was assumed for 1933 that the contribution to any item of all unconsolidated subsidiaries with total assets less than 10 million dollars was equal to the average contribution for each interval over the next four 10-million dollar intervals. All the unconsolidated subsidiaries with total assets between $10,000,000 and $50,000,000 were tabulated, and totals were obtained for the following selected items:

Capital assets.
Taxable investments.
Total assets.
Gross receipts.
Compiled net profit or loss.

The other items were adjusted by examining related items whose adjustment increment had been computed and assuming about the same relative adjustment. Thus, interest received from taxable investments and dividends received were assumed to have the same relative adjustment as taxable investments; depreciation and depletion was assumed to have the same as capital assets; and the rest of the items were assumed to have the same relative adjustments as gross receipts and total assets, which were almost the same. These estimated adjustment percentages were applied to the unadjusted totals for the 200. The adjusted totals and the increments were entered on tables II and III. The increments for the five items listed above were derived directly and entered on the tables.

The increment added to the total for each item for the 200 largest corporations was partitioned among the constituent industrial groups by assuming that the percentage distribution by industrial groups was the same before and after the adjustment.

An analogous procedure was used in 1929. The average of the three equal intervals from $14,023,000 to $56,092,000 in total assets was used for the estimate of all unconsolidated subsidiaries with total assets below $14,023,000. This estimate was computed for the same items as in 1933 and the estimates for other items were derived from these estimates on the basis of the same assumptions as were made for the 1933 adjustment. The adjustment increments are included on the basic tables II and III. In table V each industrial group was assigned the same adjustment increment as it had in table II. It was assumed that the omission of a few of the smallest corporations in each industrial group did not diminish the size of the adjustment increment. For the interpolated years in table IV the adjustment is implicit in the interpolation estimates, as the interpolation index was applied to the end year totals after they had been adjusted for the omission of unconsolidated subsidiaries below the minimum.

A test for the internal consistency of the adjustments in the balance-sheet items was devised. It is the same test as was used in the adjustment for missing balance sheets.[12b] The adjustment for miscellaneous assets was compared with unadjusted miscellaneous assets. In a few cases there was a very small negative adjustment. These were so close to zero that the discrepancy indicated is of no material importance. None of the positive adjustments were large. The percentages are shown in table VIII.

TABLE VIII.— *Adjustment for unconsolidated subsidiaries below the minimum; percentage adjustment for miscellaneous assets*

| *Industrial group and year* | *Percent adjusted* |
|---|---|
| All industrial groups: | |
| 1929 | 0.9 |
| 1933 | 0.3 |
| Manufacturing: | |
| 1929 | 1.6 |
| 1933 | 2.4 |
| Transportation and other public utilities: | |
| 1929 | 0.5 |
| 1933 | −0.2 |
| Transportation: | |
| 1929 | 0.8 |
| 1933 | −0.5 |
| Other public utilities: | |
| 1929 | −0.1 |
| 1933 | 0.1 |
| Other corporations: | |
| 1929 | 1.4 |
| 1933 | 0.0 |

## 4. Problems Relating to Consolidation of Balance Sheets

The definition of corporation discussed in section 1 implies that the tabulation of the 200 largest nonfinancial corporations was made up from 200 consolidated balance sheets. Each unit of control under this ideal system would present a single balance sheet and a single income statement, for it is considered as a single corporation. As a matter of fact, the data were not available in the Bureau of Internal Revenue in this form. Companies controlled 95 percent or more by the parent and its controlled subsidiaries were actually consolidated for the most part, but other subsidiaries (by the definition here used) were not. For reasons appearing below this desired consolidation could not be approximated, so it became necessary simply to add the several items of these unconsolidated subsidiaries to those of the parent and consolidated subsidiaries, and to use these sums as estimates of the desired consolidations. The discrepancies between the actual sums and the desired consolidated totals arose out of the difference between the definition of subsidiary in this study and the Bureau of Internal Revenue definition of subsidiary for purposes of taxation.

The consolidated return as filed in the Bureau of

[12b] See section 2.

Internal Revenue has had all intercorporate relations between the income statement and balance sheet of the parent and the subsidiary removed, but the unconsolidated return has not. If accounts receivable and accounts payable include accounts receivable from and payable to other corporations in the same control unit, these should be deducted from the totals for the unit. But in the case of unconsolidated subsidiaries, this cannot be done. The reports to the Bureau of Internal Revenue do not distinguish between accounts payable to or receivable from a corporation in the same control unit, and those to or from any other corporation. Therefore, items subject to this type of duplication show evidence of large error (for the purposes of this report), and the following items should be read with this in mind:

Interest received from taxable investments.
Cash dividends received.
Interest paid.
Cash dividends paid.

Compiled net profits by definition includes dividends received, and is therefore subject to this type of error. The same is true of the derived items: income derived from operations, and corporate savings, each of which includes items which involve double counting.

The summation of figures for total assets does not represent complete consolidation of the balance sheet of each unit of control. Neither does the summation of total assets of all corporations reported by the Bureau of Internal Revenue represent the consolidation of control units. This discrepancy arises out of the intercorporate holdings of securities and loans within the same corporate unit which would be cancelled out in the process of consolidation. A direct comparison of the sum of the assets of the 200 largest control units and the sum of all corporations reporting to the Bureau of Internal Revenue tends to give a larger concentration ratio than would be obtained if the assets of all control units, whether in the 200 largest or not, were completely consolidated. A large part of the discrepancy arising from the lack of complete consolidation can be corrected by subtracting taxable investments, the element making the largest contribution to the discrepancy, from the figures of both the largest and all corporations. The distortion resulting from intercorporate lending within corporate units is probably small. Subtraction of the entire holdings of taxable investments overcorrects somewhat because of holdings of securities of corporations not in the same control unit. There would be no error in the concentration ratio from this source if the securities of other corporations held as investments by the 200 largest units and those held by corporations other than the 200 largest bear the same proportion to their respective total consolidated assets. This seems to be a condition closely enough approximated to make the discrepancy arising from this source of a minor character.

The concept of "the assets of the 200 largest corporations" may now be refined. What is really meant is the arithmetic sum of all the asset items on the 200 largest nonfinancial consolidated balance sheets (and, of course, income statements). All intercompany relations within any consolidated balance sheet would be eliminated but not other intercompany relations within the 200. A distinction must be made, therefore, between this concept and the concept of a single consolidated balance sheet embracing the 200 largest consolidated balance sheets. The latter would eliminate intercorporate relations between any corporations affiliated with any of the 200 largest corporations. The latter totals would be smaller in the items mentioned above, since intercompany eliminations would have been made.

As a matter of fact, it was impossible to set up the 200 consolidated balance sheets, but departures from this desired procedure are regarded in this report as errors.

Besides the double counting that cannot be eliminated from the sum of the parent and unconsolidated subsidiaries, other errors are likely to occur. The classification of unconsolidated subsidiaries in the industrial group of their parents may change the geographical classification from that in which they are listed in *Statistics of Income*.[13] These shifts do not concern this report. But the industrial classifications may be, and undoubtedly often are, shifted. The unconsolidated subsidiaries were reported in their own industrial groups in *Statistics of Income*,[14] but in the present tabulation they were reported in the industrial group of their parent companies. The resulting industrial misclassification has been discussed in section 1, above.

### 5. Notes on the Interpolation

Three asset items, total assets, capital assets, and total assets less taxable investments, were estimated for the 200 largest corporations for the years 1930–32 on a basis comparable with table I. The procedure and assumptions were set up in consideration of the state of the data for this period, and the limited time and clerical facilities allotted to this study. Therefore, these figures are merely estimates rather than tabulated totals and they are derived by making certain specific assumptions which are subject to partial test.

Estimates were derived for each industrial group and the four estimates were summed to obtain the estimated totals for the 200. The work was shortened by omitting from consideration all unconsolidated subsidiaries and by using all the companies in the lists of the 200 largest

[13] The same applies to net income—net deficit classification as well.
[14] And therefore in the denominator of the concentration ratio.

for both 1929 and 1933 where the data were available. This procedure is justified by the small number of replacements in the list—a yearly change of 2 or 3 percent. So that all information available would be used, the yearly percent changes of all companies which reported in both of each two successive years were used. From these comparable data a chain index series was constructed for each item for each industrial group. These indexes were taken to represent the percent changes of all companies in the largest 200, including unconsolidated subsidiaries.[15]

The chain indexes were derived from yearly percent changes of identical companies. The actual data used were not entirely from the Bureau of Internal Revenue. Where a company was missing in a single intermediate year, or where an erratic change threw one year out of line with the two adjacent years, a comparison was made with Moody's *Manuals*. If the behavior of the data for the preceding and following years from the two sources approximately agreed,[16] the intermediate year was interpolated using the Moody's figures as an index of change.

This augmentation of the Bureau of Internal Revenue data had a tendency to stabilize the annual percent changes by increasing the size of the samples and by eliminating individual erratic observations. Hence the movements of the chain index were damped; the erratic quality of the index was understated. This modification of the originally designed procedure was intended to protect the annual percent changes from variation in the degree of consolidation in the returns of the same corporations in adjacent years.

The 1933 figure of this chain index on a 1929 base gave the percent change for the period 1929 through 1933. But, as a matter of fact, this percent change was accurately known, for it could easily be derived from the two tabulations for 1929 and 1933. This gave a correct index number for 1933. The crude 1933 chain index number was therefore adjusted to equal the correct index number and the earlier years were adjusted by an increment based on an assumed linearity of the drift for the period 1929–33.[17] After the indexes were corrected they could be multiplied by the base figure, yielding a complete set of estimates of the three asset items by industrial groups for the three interpolated years.

These estimates can be tested in various ways. If the percent changes are truly representative of the whole 200 largest corporations, including unconsolidated subsidiaries, and the industrial percent distributions are accurate, the sum of the totals for the various industrial groups should be the same as the estimates for the 200 largest taken as a unit without regard to industrial classification. This comparison was made and is presented in table IX. The index numbers made up without regard to industrial classification were derived as described above. The absolute totals for the various industrial groups were summed, and the totals for all groups reduced to index series for comparison.

TABLE IX.— *Estimates made* (1) *with and* (2) *without regard to industrial groups*

| Item | Method of estimating | Index numbers (1929=100) | | | | |
|---|---|---|---|---|---|---|
| | | 1929 | 1930 | 1931 | 1932 | 1933 |
| Total assets | (1) | 100.0 | 108.6 | 103.1 | 98.1 | 97.0 |
| | (2) | 100.0 | 108.5 | 102.9 | 98.0 | 97.0 |
| Capital assets | (1) | 100.0 | 107.5 | 107.4 | 103.8 | 102.7 |
| | (2) | 100.0 | 107.4 | 106.9 | 103.7 | 102.7 |

This test is one-directional in nature. For the estimated figures for industrial groups to be accurate, it is a necessary, but not a sufficient condition, that the two estimates be close. If the estimates made by the two methods are close, the industrial group estimates might be accurate and they might not. But if the two estimates are not close, the industrial group estimates cannot be accurate. By definition, the closeness of the estimates for the total, with and without regard to industrial groups, is evidence in the direction of accuracy of that total. It can be seen directly that the two indexes yield the same result within rounding errors except for the middle year. The discrepancies for total assets are 0.0, 0.1, 0.2, 0.1, 0.0, and those for capital assets are 0.0, 0.1, 0.5, 0.1, 0.0. The assumption of a linear adjustment makes the end years correct. The years next to the end years are least likely to suffer from this procedure, with the middle year the least accurate. This is what is actually found. The largest errors indicated here are smaller than other errors known to exist for these estimates, so it is evident that the interpolation meets this test of consistency.

A second test of the accuracy of the interpolation may be made by further examining the internal consistency of the results. Total assets should be larger than capital assets and larger than total assets less taxable investments. The difference between total assets and total assets less taxable investments should yield a reasonable result for taxable investments. Similarly, the difference between total assets less taxable investments and capital assets should yield a reasonable result for liquid assets.[18] These estimates for taxable

[15] No independent determination of the lists of the 200 largest for the interpolated years was made.

[16] i. e., had approximately the same level and the same percent change for the 2-year interval.

[17] Hence the difference between the 1933 relative of the complete tabulation for each industrial group (1929=100) and the corresponding chain index for 1933 (1929=100) was allocated evenly over the four annual intervals. This adjustment was made necessary by at least two definable causes: (1) The number of the 200 corporations in each industrial group was not the same in 1929 and 1933 in every case, and (2) the index was not perfectly representative of the 200 parents, plus their consolidated subsidiaries, plus their unconsolidated subsidiaries of all sizes.

[18] Inventories, cash, notes and accounts receivable, and miscellaneous assets.

investments and liquid assets, which are implied in table IV, raise no serious problems

A third test of the accuracy of the interpolation depends on the obvious condition that any asset item for the 200 largest must be smaller than the same item for all nonfinancial corporations. This must apply to taxable investments and liquid assets as well as total assets, capital assets, and total assets less taxable investments. In every case the figures for the 200 largest were smaller than the figures for all corporations.

From the three tests described above there would seem to be little objection to the figures in table IV that could arise from the interpolation.

Taxable investments were poorly reported and the chain index intended for interpolation had to be based on a small and somewhat erratic sample. Therefore the same index as was used to interpolate for total assets was also used to interpolate for total assets less taxable investments by applying it to the 1929 and 1933 figures for total assets less taxable investments. No inconsistency was detected in the resulting figures. Total assets and capital assets were interpolated from chain indexes made up of yearly percent changes of total assets and capital assets, respectively.

## PART II—FINANCIAL CORPORATIONS

A crude investigation was made of the degree of concentration of financial corporations in 1933. The list examined was composed of the 50 largest financial corporations in 1933, excluding unconsolidated subsidiaries. Of the 50, 24 were banks, 17 were insurance companies,[19] and the remaining 9 were "other financials". The list of the 50 largest was selected after examination of the returns of all financial corporations with total assets over 50 million dollars. The 50 corporations with the largest total assets (considered independently of their unconsolidated subsidiaries) which were independent, according to Moody's, and which were classified by Moody's as financials, were listed. This last requirement eliminated three companies (holding companies) classified by the Bureau of Internal Revenue as financials, but classified by Moody's in the *Utilities* or *Railroad Manuals*. One company included in the list actually was not independent at the end of 1933. Since the company was independent through most of the year, since the assets of its parent were too small for the parent to get on the list, and since the corporate structure of its parent was so involved that the Moody analysis in no way corresponded with the situation found by the Securities and Exchange Commission, the company was included in the list as independent.

The items tabulated for the financial corporations were selected on the basis of their importance, and are not intended to give as complete a picture as the items for the 200 nonfinancial corporations. In particular, the complete asset side of the balance sheet is not presented for the financial corporations. Life insurance companies file a special type of income-tax return, on which no item corresponding to receipts is reported, so that the receipts tabulated for the 50 largest financial corporations are not a reliable measure of the quantity of business done by them.

[19] While the definition included all types of insurance companies, all of these were, in fact, life insurance companies

No attempt was made to adjust the totals for the 50 for missing subsidiaries, as all unconsolidated subsidiaries, of whatever size, had been omitted from the tabulation.

In comparing the 50 largest to all financial corporations, the balance-sheet items for all financial corporations were adjusted for corporations not submitting balance sheets, using the same procedure as was used for nonfinancials. Since none of the 50 financials were real estate corporations, it was felt that to compare them with all financials, including real estate companies, would distort the concentration ratios for certain items, particularly capital assets. However, adjustment for missing balance sheets could not be made directly for financials excluding real estate, since the Bureau of Internal Revenue did not separate returns with balance sheets from returns without balance sheets for subgroups of financial corporations. Consequently, the same adjustment factors as were used for all financials were applied to the totals for financials less real estate. The error thus introduced is insignificant.

Table X shows the totals for the 50 largest financial corporations, the totals for all financial corporations, and all financial corporations excluding real estate, with their adjustments, and the concentration ratios derived therefrom.

This part of the study is very crude, so a few words of caution are in order. The 50 largest financials exclude unconsolidated subsidiaries, so the unit of control is not the same as the unit in the nonfinancial corporation statistics. A "financial corporation" is therefore not comparable to a nonfinancial corporation in the terminology of this study.

The 50 largest financials are not to be regarded as an "equally important" or "the same" proportion of the total for all financials as the 200 nonfinancials are of the total for all nonfinancials. Fifty was merely a convenient number of financial corporations chosen to show a significant amount of concentration when compared

to all financials. Whether there is "more" concentration in financials or in nonfinancials is a question without meaning by the present definition of concentration. No cross-comparisons should be made between the concentration ratios. The accompanying table is presented exclusively for its own intrinsic interest and is independent of the tables in part I of this appendix.

TABLE X.—*Derivation of the concentration ratios, and the totals for selected asset items and income-statement items for the 50 largest financial corporations (excluding unconsolidated subsidiaries) and all financial corporations, 1933*

| | All financial corporations except real estate | | | | | All financial corporations | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 50 largest financial corporations | Corporations submitting balance sheets [1] | Adjustment of balance-sheet items for corporations not submitting balance sheets | Totals with balance-sheet items adjusted | Concentration ratio: 50 largest to all financial corporations except real estate | Corporations submitting balance sheets [2] | Adjustment of balance-sheet items for corporations not submitting balance sheets | Totals with balance-sheet items adjusted | Concentration ratio: 50 largest to all financial corporations |
| | Millions of dollars | | | | Percent | Millions of dollars | | | Percent |
| ASSET ITEMS | | | | | | | | | |
| Cash [3] | 3,505 | 9,071 | 807 | 9,878 | 35.5 | 9,252 | 824 | 10,076 | 34.8 |
| Capital assets less reserve for depreciation and depletion | 709 | 3,237 | 172 | 3,409 | 20.8 | 13,712 | 727 | 14,439 | 4.9 |
| Tax-exempt investments [4] | 4,102 | 10,621 | 212 | 10,833 | 40.6 | 10,751 | 215 | 10,966 | 40.2 |
| Taxable investments | 18,562 | 43,595 | 3,706 | 47,301 | 39.2 | 45,787 | 3,892 | 49,679 | 37.4 |
| Total assets [5] | 35,294 | 90,465 | 5,609 | 96,074 | 36.7 | 105,475 | 6,540 | 112,015 | 31.5 |
| Total assets less taxable investments | 16,732 | 46,870 | 1,903 | 48,773 | 34.3 | 59,688 | 2,648 | 62,336 | 26.8 |
| INCOME-STATEMENT ITEMS | | | | | | | | | |
| Gross receipts from sales and services [6] | 78 | | | 3,171 | 2.5 | | | 3,337 | 2.3 |
| Income tax [7] | 3 | | | 28 | 10.7 | | | 36 | 8.3 |
| Depreciation and depletion | 32 | | | 114 | 28.8 | | | 293 | 10.9 |
| Cash dividends paid | 338 | | | 521 | 64.9 | | | 575 | 58.8 |
| Compiled net profit or loss [8] | 55 | | | −663 | −8.3 | | | −1,070 | −5.1 |

[1] From office work sheets of the Bureau of Internal Revenue.
[2] From *Statistics of Income*.
[3] Includes cash in till and deposits in bank.
[4] Includes obligations of States and Territories or minor political subdivisions, securities issued under the Federal Farm Loan Act, and obligations of the United States or its possessions.
[5] Reserves for depreciation and depletion are deducted from total assets as well as from capital assets.
[6] Gross receipts from operations when inventories are not an income-determining factor. Gross sales where inventories are an income-determining factor are not reported for financial corporations.
[7] Federal income tax plus excess-profits tax.
[8] Statutory net income or deficit, plus interest on tax-exempt investments, plus dividends from domestic corporations, which are also nontaxable income.

# APPENDIX 12.—INTERLOCKING DIRECTORATES AMONG THE LARGEST AMERICAN CORPORATIONS, 1935[1]

This study of interlocking directorates covers the directors of the 200 largest nonfinancial corporations and the 50 largest financial corporations in 1935. For the nonfinancial corporations, the list of 200 largest nonfinancial corporations with their assets which appears in Appendix 10 was used. The 50 largest banks and financial companies (30 banks, 20 financial companies) are listed in table I.[2]

The names of directors for each corporation were compiled from the lists of corporation directorates in Poor's *Register of Directors, 1936*. In some few cases, where Poor's omitted a corporation, Moody's *Manuals* were used.

A summary of the results of this study has been given in chapter IX, charts I and II. The following tables present these results in more detail.

Only 25 of the 250 corporations have no interlocks with each other. These companies are relatively small, in terms of assets, as compared with the interlocking companies. Although they constitute 10 percent of the number of companies, their assets amount to only 4 percent of the total assets of the 250 companies. The names of the 25 noninterlocking companies are given in table II. They comprise 16 industrials, 8 utilities, and 1 railroad. There are no banks and no financial companies among them. The absence of interlocking directorates between these 25 companies and others in the list of 200 largest nonfinancial and 50 largest financial corporations does not necessarily mean that these companies are free from other types of links. They include companies which are relatively free from outside control as the Crane Co., which is owned in large part by the Crane family, and companies such as Atlantic Refining and Ohio Oil which are successor firms to the old Standard Oil Co., and are members of the Rockefeller interest group.[3]

The 225 corporations which show interlocks with each other are classified in tables III, IV, and V, and the assets represented in each class are shown.

The interlocking directorates between specific companies have been shown in charts I and II of chapter IX. Chart I, however, shows the complete picture of interlocks only for the 100 companies with the greatest number of interlocks. The interlocks among the remaining 125 companies, which appear at the top

[1] Appendix 12 was prepared by Eleanor Poland.

[2] Note that this list differs from that used in Appendix 13 since the latter contains the largest 50 banks and includes no other financial companies.

[3] See Appendix 13.

TABLE I.—*Banks and Finance Companies included in the 250 list*

BANKS

| | *Assets (millions)* |
|---|---|
| Chase National Bank | 2, 350. 5 |
| National City Bank | 1, 880. 7 |
| Guaranty Trust Co | 1, 847. 4 |
| Bank of America National Trust & Savings Association | 1, 277. 4 |
| Continental Illinois National Bank & Trust Co | 1, 141. 1 |
| Bankers Trust Co | 1, 031. 7 |
| First National Bank (Chicago) | 925. 4 |
| Central Hanover Bank & Trust Co | 914. 8 |
| First National Bank (Boston) | 729. 6 |
| Irving Trust Co | 720. 0 |
| Manufacturers Trust Co | 673. 0 |
| Chemical Bank & Trust Co | 625. 2 |
| Security First National Bank | 591. 0 |
| First National Bank (N. Y.) | 584. 2 |
| Bank of the Manhattan Co | 548. 3 |
| J. P. Morgan & Co., Drexel & Co | 537. 9 |
| Philadelphia National Bank | 432. 8 |
| New York Trust Co | 419. 7 |
| National Bank of Detroit | 395. 9 |
| Cleveland Trust Co | 337. 7 |
| Mellon National Bank | 337. 6 |
| Union Trust Co | 334. 5 |
| Northern Trust Co | 320. 7 |
| Corn Exchange Bank Trust Co | 317. 4 |
| American Trust Co | 271. 8 |
| Wells Fargo Bank & Trust Co | 248. 6 |
| First National Bank (St. Louis) | 235. 5 |
| Pennsylvania Co. for Insurances, etc | 235. 3 |
| Anglo-California National Bank | 214. 3 |
| Harris Trust & Savings Bank | 207. 6 |

OTHER FINANCIALS

| | |
|---|---|
| Metropolitan Life Insurance Co | 4, 234. 8 |
| Prudential Insurance Co | 3, 129. 5 |
| New York Life Insurance Co | 2, 243. 6 |
| Equitable Life Insurance Society of the United States | 1, 816. 2 |
| Mutual Life Insurance Co. of New York | 1, 239. 0 |
| Northwestern Mutual Life Insurance Co | 1, 072. 0 |
| Travelers Insurance Co | 787. 9 |
| John Hancock Mutual Life Insurance Co | 731. 5 |
| Penn Mutual Life Insurance Co | 600. 7 |
| Mutual Benefit Life Insurance Co | 586. 8 |
| Massachusetts Mutual Life Insurance Co | 532. 2 |
| Aetna Life Insurance Co | 503. 5 |
| Marine Midland Corporation | 453. 3 |
| New England Mutual Life Insurance Co | 343. 5 |
| Union Central Life Insurance Co | 326. 8 |
| Provident Mutual Life Insurance Co | 298. 3 |
| Commercial Investment Trust Corporation | 297. 2 |
| Wisconsin Bankshares Corporation | 276. 4 |
| Connecticut Mutual Life Insurance Co | 268. 4 |
| Pacific Mutual Life Insurance Co | 215. 6 |

of chart I but not at the side of the chart, are listed in table VI.

Data on the men who hold these directorships are given in tables VII, VIII, and IX. Table VII gives the residence of all the 2,722 directors for whom residence information was available, with the number of directorships held by these men. Table VIII lists the 83 men who held 4 or more directorships, together with the companies in which they held directorships and other positions held by them. Table IX shows their residences to be concentrated in the financial centers.

TABLE II. *25 corporations with no interlocks inside the 250 list, analyzed by type of corporation*

| | Assets (millions) |
|---|---|
| Industrials: | |
| American Tobacco Co | 264.2 |
| Singer Manufacturing Co | 175.8 |
| Liggett & Myers Tobacco Co | 170.5 |
| Eastman Kodak Co | 168.3 |
| The Atlantic Refining Co | 163.0 |
| R. J. Reynolds Tobacco Co | 153.9 |
| Glen Alden Coal Co | 151.4 |
| Ohio Oil Co | 139.7 |
| Firestone Tire & Rubber Co | 139.3 |
| S. S. Kresge Co | 118.5 |
| Crane Co | 95.2 |
| Climax Molybdenum Co | 79.1 |
| Minnesota & Ontario Paper Co | 78.2 |
| Brown Company | 76.1 |
| J. C. Penney Co | 71.4 |
| S. H. Kress & Co | 70.1 |
| | 2,118.3 |
| Utilities: | |
| Associated Gas & Electric Properties | 1,125.4 |
| Utilities Power & Light Corporation | 367.2 |
| Midland United Co | 320.0 |
| Central Public Utility Corporation | 151.6 |
| Long Island Lighting Co | 127.6 |
| Portland Electric Power Co | 95.0 |
| Jersey Central Power & Light Co | 80.1 |
| Associated Telephone Utilities Co | 79.4 |
| | 2,346.3 |
| Railroads: | |
| Western Maryland Ry. Co | 168.1 |
| | 168.1 |
| Grand total | 4,632.7 |

TABLE III.—*Distribution of companies according to number of directors holding 2 or more directorships on the 250 list*

| Number of companies | Number of directors in each company who hold directorships in 2 or more of the 250 companies | Assets (millions of dollars) |
|---|---|---|
| 33 | 1 | 10,253.8 |
| 22 | 2 | 5,720.1 |
| 18 | 3 | 3,551.0 |
| 28 | 4 | 8,137.0 |
| 29 | 5 | 11,161.3 |
| 27 | 6 | 5,807.5 |
| 15 | 7 | 9,153.6 |
| 15 | 8 | 6,123.9 |
| 7 | 9 | 5,143.4 |
| 10 | 10 | 6,855.3 |
| 5 | 11 | 11,120.6 |
| 5 | 12 | 4,614.6 |
| 4 | 13 | 6,578.7 |
| 4 | 14 | 1,509.0 |
| 3 | 15 | 1,760.6 |
| 2 | 16 | 1,944.7 |
| 2 | 17 | 1,067.2 |
| 1 | 19 | 2,237.3 |
| 1 | 22 | 1,847.4 |
| 1 | 23 | 2,350.5 |
| 225 | | [1] 110,281.5 |

[1] Equals 90 percent of total assets of the 250 corporations.

TABLE IV. *Distribution of companies according to number of directors holding 3 or more directorships on the 250 list*

| Number of companies | Number of directors in each company who hold directorships in 3 or more of the 250 companies | Assets (millions of dollars) |
|---|---|---|
| 51 | 1 | 17,213.8 |
| 28 | 2 | 10,119.9 |
| 32 | 3 | 12,366.5 |
| 18 | 4 | 5,785.2 |
| 19 | 5 | 10,371.8 |
| 13 | 6 | 11,363.0 |
| 7 | 7 | 4,254.8 |
| 8 | 8 | 5,420.8 |
| 9 | 9 | 2,220.5 |
| 3 | 10 | 4,180.5 |
| 3 | 11 | 1,343.3 |
| 2 | 12 | 1,369.3 |
| 1 | 13 | 2,350.5 |
| 1 | 15 | 1,847.4 |
| 2 | 16 | 5,237.3 |
| 187 | | [1] 98,480.6 |

[1] Equals 85.7 percent of total assets of the 250 corporations.

TABLE V. *Distribution of companies according to number of directors holding 4 or more directorships in the 250 list*

| Number of companies | Number of directors in each company who hold directorships in 4 or more of the 250 companies | Assets (millions of dollars) |
|---|---|---|
| 54 | 1 | 17,912.1 |
| 33 | 2 | 12,321.6 |
| 26 | 3 | 15,775.5 |
| 17 | 4 | 12,562.0 |
| 9 | 5 | 7,117.5 |
| 4 | 6 | 4,870.7 |
| 3 | 7 | 5,253.3 |
| 4 | 8 | 6,445.9 |
| 1 | 10 | 1,230.0 |
| 151 | | [1] 83,857.6 |

[1] Equals 74 percent of the total assets of the 250 corporations.

TABLE VI.—*Interlocking directorates among 200 largest non-financial and 50 largest financial corporations not shown on Chart I of chapter IX* [1]

| Corporation | Interlocking directorates with— |
|---|---|
| Reading Co | Baltimore & Ohio R. R. Co. |
| | Pennsylvania Co. for Insurances, etc. |
| Virginia Ry. Co | Brooklyn Union Gas Co. |
| Phillips Petroleum Co | Manufacturers Trust Co., New York. |
| | First National Bank (St. Louis). |
| National Dairy Products Corporation. | Sears, Roebuck & Co. |
| | McKesson & Robbins, Inc. (Maryland). |
| | Gimbel Bros., Inc. |
| Shell Union Oil Corporation. | Swift & Co. |
| | Chicago, Rock Island & Pacific Ry. Co. |
| | Socony-Vacuum Oil Co., Inc. |
| United Shoe Machinery Corporation. | Travelers Insurance Co. |
| American Power & Light Co. | Anaconda Copper Mining Co. |
| | Florida East Coast Ry. Co. |
| | American Gas & Electric Co. |
| Chicago, Rock Island & Pacific Ry. Co. | Shell Union Oil Corporation. |
| | Republic Steel Corporation. |
| | Atlantic Coast Line. |
| Manufacturers Trust Co., New York. | Socony-Vacuum Oil Co., Inc. |
| | Cities Service Co. |
| | Phillips Petroleum Co. |
| Pacific Mutual Life Insurance Co. | Union Oil Co. of California. |
| | Crown Zellerbach Corporation. |
| | Pacific Gas & Electric Co. |
| | Security First National Bank, Los Angeles. |
| | Anglo-California National Banks. |
| | Southern California Edison Co., Ltd. |
| Bethlehem Steel Corporation. | Anaconda Copper Mining Co. |
| | Interlake Iron Corporation. |
| | National Fuel Gas Co. |
| Anaconda Copper Mining Co. | Bethlehem Steel Corporation. |
| | Interlake Iron Corporation. |
| | American Power & Light Co. |
| | Kansas City Southern Ry. Co. |
| | National Bank of Detroit. |
| Republic Steel Corporation. | Niagara Hudson Power Corporation. |
| | Standard Gas & Electric Co. |
| | Chicago, Rock Island & Pacific Ry. Co. |
| | Marine Midland Corporation. |
| Sears, Roebuck & Co | National Dairy Products Corporation. |
| | R. H. Macy & Co., Inc. |
| | Gimbel Brothers, Inc. |
| | McKesson & Robbins, Inc. (Maryland). |
| Loew's, Inc | Commercial Investment Trust Corporation. |
| Philadelphia & Reading Coal & Iron Corporation. | Baldwin Locomotive Works. |
| | Minneapolis & St. Louis R. R. Co. |
| | Provident Mutual Life Insurance Co. |

[1] Interlocks among companies whose names do not appear at side of chart. Interlocks between these same companies and those whose names appear at side of chart are shown on the chart and are not listed here.

TABLE VI.—*Interlocking directorates among 200 largest non-financial and 50 largest financial corporations not shown on Chart I of chapter IX*—Continued

| Corporation | Interlocking directorates with— |
|---|---|
| Gimbel Brothers, Inc | Sears, Roebuck & Co. |
| | Wisconsin Bankshares Corporation. |
| | National Dairy Products Corporation. |
| Cities Service Co | Philadelphia Rapid Transit Co. |
| | Manufacturers Trust Co., New York. |
| | Marine Midland Corporation. |
| | Natural Gas Pipeline Co. of America. |
| Niagara Hudson Power Corporation. | Republic Steel Corporation. |
| | St. Regis Paper Co. |
| | Marine Midland Corporation. |
| American Gas & Electric Co. | North American Co. |
| | American Power & Light. |
| Baltimore & Ohio R. R. Co. | Reading Co. |
| Seaboard Air Line Ry. Co. | Corn Products Refining Co. |
| | Wheeling Steel Corporation. |
| | Commonwealth Southern Corporation. |
| Norfolk & Western Ry. Co. | Pennsylvania Co. for Insurances, etc. |
| Pennsylvania Co. for Insurances, etc. | Reading Co. |
| | Norfolk & Western Ry. Co. |
| | National Lead Co. |
| Marine Midland Corporation. | Republic Steel Corporation. |
| | St. Regis Paper Co. |
| | Cities Service Co. |
| | Niagara Hudson Power Corporation. |
| McKesson & Robbins, Inc. (Maryland). | Sears, Roebuck & Co. |
| | National Dairy Products Corporation. |
| | Pacific Lighting Corporation. |
| Baldwin Locomotive Works. | Philadelphia & Reading Coal & Iron Corporation. |
| Tide Water Associated Oil Co. | Anglo-California National Bank. |
| North American Co | Wisconsin Bankshares Corporation. |
| | Sears, Roebuck & Co. |
| | American Gas & Electric Co. |
| | Pacific Gas & Electric. |
| Southern California Edison Co., Ltd. | Union Oil Co. of California. |
| | Pacific Lighting Corporation. |
| | Security First National Bank, (Los Angeles). |
| | Pacific Mutual Life Insurance Co. |
| Missouri Pacific R. R. Co. | Youngstown Sheet & Tube Co. |
| | Alleghany Corporation. |
| | Denver & Rio Grande Western R. R. Co. |
| Denver & Rio Grande Western R. R. Co. | Alleghany Corporation. |
| | Missouri Pacific R. R. Co. |
| Anglo-California National Bank. | Standard Oil Co. of California. |
| | Crown Zellerbach Corporation. |
| | Security First National Bank, (Los Angeles). |
| | Pacific Mutual Life Insurance Co. |
| | Tide Water Associated Oil Co. |
| Cleveland Trust Co | Cleveland-Cliffs Iron Co. |
| | Interlake Iron Corporation. |

TABLE VI.—*Interlocking directorates among 200 largest nonfinancial and 50 largest financial corporations not shown on Chart I of chapter IX*—Continued

| Corporation | Interlocking directorates with |
|---|---|
| First National Bank (St. Louis). | International Shoe Co. |
| | Chicago & Eastern Illinois Ry. Co. |
| | Commercial Investment Trust Corporation. |
| | Phillips Petroleum Co. |
| | St. Louis Public Service Co. |
| National Bank of Detroit | Anaconda Copper Mining Co. |
| | Detroit Edison Co. |
| Travelers Insurance Co. | United Shoe Machinery Corporation. |
| United States Rubber Co. | General American Transportation Corporation. |
| American Rolling Mill Co. | Columbia Gas & Electric Corporation. |
| R. H. Macy & Co., Inc. | Sears, Roebuck & Co. |
| Corn Products Refining Co. | Allis Chalmers Manufacturing Co. |
| | Seaboard Air Line Ry. Co. |
| Allis Chalmers Manufacturing Co. | Corn Products Refining Co. |
| | Northwestern Mutual Life Insurance Co. |
| | Wisconsin Bankshares Corporation. |
| Interlake Iron Corporation. | Bethlehem Steel Corporation. |
| | Anaconda Copper Mining Co. |
| | Allied Chemical & Dye Corporation. |
| | Cleveland Trust Co. |
| Pacific Gas & Electric Co. | North American Co. |
| | Pacific Lighting Corporation. |
| | Pacific Mutual Life Insurance Co. |
| | American Trust Co. |
| Columbia Gas & Electric Corporation. | American Rolling Mill Co. |
| | Sun Oil Co. |
| | Lone Star Gas Corporation. |
| Detroit Edison Co. | National Bank of Detroit |
| | North American Co. |
| Commercial Investment Trust Corporation. | Loew's, Incorporated. |
| | Community Water Service Co. |
| | First National Bank (St. Louis). |
| Wisconsin Bankshares Corporation. | Gimbel Bros., Inc. |
| | North American Co. |
| | Allis Chalmers Manufacturing Co. |
| | Northwestern Mutual Life Insurance Co. |
| Chicago & Western Indiana R. R. Co. | Chicago & Eastern Illinois Ry. Co. |
| Security First National Bank, Los Angeles. | Union Oil Co. of California |
| | Southern California Edison Co., Ltd. |
| | Anglo-California National Bank. |
| | Pacific Mutual Life Insurance Co. |
| Commonwealth Southern Corporation. | Seaboard Air Line Ry. Co. |
| Pacific Lighting Corporation. | McKesson & Robbins, Inc. (Md.). |
| | Pacific Gas & Electric Co. |
| | Southern California Edison Co., Ltd. |
| | American Trust Co. |
| Swift & Co. | Shell Union Oil Corporation. |
| | Aetna Life Insurance Co. |

TABLE VI. *Interlocking directorates among 200 largest nonfinancial and 50 largest financial corporations not shown on Chart I of chapter IX*—Continued

| Corporation | Interlocking directorates with |
|---|---|
| Union Oil Co. of California | Southern California Edison Co., Ltd. |
| | Security First National Bank, Los Angeles. |
| | Pacific Mutual Life Insurance Co. |
| St. Regis Paper Co. | Niagara Hudson Power Co. |
| | Marine Midland Corporation. |
| Cleveland-Cliffs Iron Co. | Cleveland Trust Co. |
| | Wheeling Steel Corporation. |
| Allegheny Corporation | Denver & Rio Grande Western R. R. Co. |
| | Missouri Pacific R. R. Co. |
| Aetna Life Insurance Co. | Swift & Co. |
| | Connecticut Mutual Life Insurance Co. |
| Provident Mutual Life Insurance Co. | Philadelphia & Reading Coal & Iron Corporation. |
| Northwestern Mutual Life Insurance Co. | Allis Chalmers Manufacturing Co. |
| | Wisconsin Bankshares Corporation. |
| American Trust Co. | Hearst Consolidated Publications, Inc. |
| | Pacific Lighting Corporation. |
| | Pacific Gas & Electric Co. |
| National Fuel Gas Co. | Bethlehem Steel Corporation. |
| Chicago & Eastern Illinois Ry. Co. | Chicago & Western Indiana R. R. Co. |
| | First National Bank (St. Louis). |
| Kansas City Southern Ry. Co. | Anaconda Copper Mining Co. |
| National Lead Co. | Pennsylvania Co. for Insurances, etc. |
| Crown Zellerbach Corporation. | Wells Fargo Bank & Union Trust Co. |
| | Anglo-California National Bank. |
| | Pacific Mutual Life Insurance Co. |
| Socony-Vacuum Oil Co., Inc. | Manufacturers Trust Co., New York. |
| | Shell Union Oil Corporation. |
| Community Water Service Co. | Commercial Investment Trust Corporation. |
| Philadelphia Rapid Transit Co. | Cities Service Co. |
| St. Louis Public Service Co. | First National Bank (St. Louis). |
| Natural Gas Pipeline Co. of America. | Cities Service Co. |
| Brooklyn Union Gas Co. | Virginia Ry. Co. |
| Wheeling Steel Corporation. | Seaboard Air Line Ry. Co. |
| | Cleveland-Cliffs Iron Co. |
| American I. G. Chemical Corporation. | Standard Oil Co. (New Jersey). |
| | Ford Motor Co. |
| Sun Oil Co. | Columbia Gas & Electric Corporation. |
| Hearst Consolidated Publications, Inc. | American Trust Co. |
| Minneapolis & St. Louis R. R. Co. | Philadelphia & Reading Coal & Iron Corporation. |
| Atlantic Coast Line R. R. Co. | Chicago, Rock Island & Pacific Ry. Co. |
| Union Central Life Insurance Co. | Procter & Gamble Co. |
| Connecticut Mutual Life Insurance Co. | Aetna Life Insurance Co. |

TABLE VI.—*Interlocking directorates among 200 largest non-financial and 50 largest financial corporations not shown on Chart I of chapter IX*—Continued

| Corporation | Interlocking directorates with— |
|---|---|
| Lone Star Gas Corporation | Columbia Gas & Electric Corporation. |
| Standard Gas & Electric Co. | Republic Steel Corporation. |
| Florida East Coast Ry. Co. | American Power & Light. |
| Wells Fargo Bank & Union Trust Co. | Crown Zellerbach Corporation. |
| General American Transportation Corporation. | United States Rubber Co. |
| Procter & Gamble Co. | Union Central Life Insurance Co. |
| International Shoe Co. | First National Bank (St. Louis). |
| Youngstown Sheet & Tube Co. | Missouri Pacific R. R. Co. |
| Allied Chemical & Dye Corporation. | Interlake Iron Corporation. |
| Standard Oil Co. of California. | Anglo-California National Bank. |
| Ford Motor Co. | American I. G. Chemical Corporation. |
| Standard Oil Co. (New Jersey). | American I. G. Chemical Corporation. |

TABLE VII.—*Residence distribution by States of 2,722 directors in 250 large corporations*

| State | Number of directorships held | | | | | | | | | Total for State |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |
| Alabama | 6 | 1 | | | | | | | | 7 |
| Arizona | 1 | | | | | | | | | 1 |
| Arkansas | 2 | | | | | | | | | 2 |
| California | 146 | 14 | 4 | | 1 | | | | | 165 |
| Colorado | 2 | | | | | | | | | 2 |
| Connecticut | 71 | 7 | 3 | 2 | 1 | 1 | | | 1 | 86 |
| Delaware | 16 | 4 | 1 | | | | | | | 21 |
| District of Columbia | 6 | 1 | 1 | | | | | | | 8 |
| Florida | 5 | 1 | | | | | | | | 6 |
| Georgia | 5 | | | | | | | | | 5 |
| Idaho | | | | | | | | | | |
| Illinois | 175 | 32 | 9 | 5 | 4 | | 1 | 1 | | 227 |
| Indiana | 5 | 1 | | | | | | | | 6 |
| Iowa | 4 | | | | | | | | | 4 |
| Kansas | 3 | 1 | | | | | | | | 4 |
| Kentucky | 4 | | | | | | | | | 4 |
| Louisiana | 4 | 2 | | | | | | | | 6 |
| Maine | 4 | | | | | | | | | 4 |
| Maryland | 22 | 1 | 2 | 1 | | | | | | 26 |
| Massachusetts | 98 | 18 | 7 | 1 | 4 | 1 | 1 | | | 130 |
| Michigan | 37 | 3 | | | | | | | | 40 |
| Minnesota | 17 | 1 | | | | | | | | 18 |
| Mississippi | 1 | | | | | | | | | 1 |
| Missouri | 55 | 5 | 1 | 1 | | | | | | 62 |
| Montana | 3 | | | | | | | | | 3 |
| Nebraska | 5 | | | | | | | | | 5 |
| Nevada | | | | | | | | | | |
| New Hampshire | 6 | | | | | | | | | 6 |
| New Jersey | 119 | 14 | 11 | 6 | 1 | | | | | 151 |
| New Mexico | | | | | | | | | | |
| New York | 485 | 95 | 44 | 21 | 6 | 4 | 1 | 1 | | 660 |
| North Carolina | 22 | | | | | | | | | 22 |
| North Dakota | | | | | | | | | | |
| Ohio | 106 | 14 | 1 | 2 | | | | | | 123 |
| Oklahoma | 6 | | | | | | | | | 6 |
| Oregon | 6 | | | | | | | | | 6 |
| Pennsylvania | 162 | 37 | 15 | 9 | 2 | | | 1 | | 226 |
| Rhode Island | 3 | 1 | | | | | | | | 4 |
| South Carolina | 2 | | | | | | | | | 2 |
| South Dakota | | | | | | | | | | |
| Tennessee | 6 | | | | | | | | | 6 |
| Texas | 11 | | | | | | | | | 11 |
| Utah | 1 | 1 | | | | | | | | 2 |
| Vermont | 5 | | | | | | | | | 5 |
| Virginia | 9 | 2 | | | | | | | | 11 |
| Washington | 3 | | | | | | | | | 3 |
| West Virginia | 14 | | | | | | | | | 14 |
| Wisconsin | 35 | 8 | 1 | | | | | | | 44 |
| Wyoming | 2 | | | | | | | | | 2 |
| Residence unknown | 523 | 38 | 2 | | | | | | | 563 |
| England | 2 | | | | | | | | | 2 |
| British Columbia | 1 | | | | | | | | | 1 |
| Ontario | 3 | | | | | | | | | 3 |
| Quebec | 5 | | | | | | | | | 5 |
| Mexico | | 1 | | | | | | | | 1 |
| Total | 2,234 | 303 | 102 | 48 | 19 | 6 | 6 | 3 | 1 | 2,722 |

TABLE VIII.—*Men holding 4 or more directorships among the 250 great corporations with the names of the corporations*

[(I)=Industrial; (U)=Utility; (R)=Railroads; (B)=Banks; (F)=Finance Co.'s]

MEN HOLDING 9 DIRECTORSHIPS

| Names | Companies | Positions [1] |
|---|---|---|
| Davison, G. W., Greenwich, Conn. | (I) Union Carbide & Carbon Corporation. | |
| | Chrysler Corporation | |
| | United Fruit Co. | |
| | Crucible Steel Co. | |
| | (U) Western Union Telegraph Co. | |
| | Third Avenue Ry. Co. | |
| | (R) Wabash Ry. Co. | |
| | Virginian Ry. Co. | |
| | (B) Central Hanover Bank & Trust Co. | Chairman of board and trustee |

MEN HOLDING 8 DIRECTORSHIPS

| | | |
|---|---|---|
| Avery, S. L., Chicago. | (I) United States Steel Corporation | |
| | Armour & Co. | |
| | Pullman, Inc. | |
| | Montgomery, Ward & Co. | Chairman of board, president, and director. |
| | (U) Commonwealth Edison Co. | |
| | Peoples Gas Light & Coke Co. | |
| | (R) Chicago Great Western R. R. Co. | |
| | (B) Northern Trust Co. | |
| Mellon, R. K., Pittsburgh. | (I) Gulf Oil Corporation | |
| | Koppers Co. of Delaware | |
| | Pullman, Inc. | |
| | Aluminum Co. of America | |
| | Pittsburgh Plate Glass Co. | |
| | (R) Pennsylvania R. R. Co. | |
| | (B) Mellon National Bank | President, and director. |
| | Union Trust Co. | |
| Wiggin, A. H., New York City. | (I) American Sugar Refining Co. | |
| | American Woolen Co. | |
| | (U) International Paper & Power Co. | |
| | Stone & Webster, Inc. | |
| | Western Union Telegraph Co. | |
| | Brooklyn-Manhattan Transit Corporation. | |
| | Hudson & Manhattan R. R. Co. | |
| | (R) New York, New Haven & Hartford R. R. Co. | |

MEN HOLDING 7 DIRECTORSHIPS

| | | |
|---|---|---|
| Baker, G. F., New York City. | (I) United States Steel Corporation | |
| | General Motors Corporation | |
| | Pullman, Inc. | |
| | (U) American Telephone & Telegraph Co. | |
| | (R) New York Central R. R. | |
| | (B) First National Bank (N. Y.) | Chairman of board and director. |
| | (F) Mutual Life Insurance Co. of New York. | Trustee. |
| Ecker, F. H., New York City. | (U) Consolidated Edison of New York, Inc. | Trustee. |
| | Interborough Rapid Transit Co. | |
| | Western Union Telegraph Co. | |
| | (R) Chicago, Milwaukee, St. Paul & Pacific R. R. Co. | |
| | St. Louis-San Francisco Ry. Co. | |
| | (B) Chase National Bank | |
| | (F) Metropolitan Life Ins. Co. | President and director. |
| McLennan, D. R., Lake Forest, Ill. | (I) Armour & Co. | |
| | Pullman, Inc. | |
| | Montgomery Ward & Co. | |
| | American Sugar Refining Co. | |
| | (U) Peoples Gas Light & Coke Co. | |
| | (R) Pennsylvania R. R. Co. | |
| | (B) Continental Illinois National Bank & Trust Co. | |
| Perkins, T. N., Westwood, Mass. | (I) Loew's Inc. | |
| | General Foods | |
| | (U) American Telephone & Telegraph Co. | |
| | Stone & Webster, Inc. | Member executive committee and director. |
| | (R) Southern Pacific Co. | |
| | Boston & Maine R. R. Co. | Do. |
| | (B) First National Bank (Boston) | |
| Reynolds, J. F., New York City | (I) American Radiator & Standard Sanitary Corporation. | |
| | National Biscuit Co. | |
| | (R) New York Central R. R. Co. | |
| | Southern Pacific Co. | |
| | Southern Ry. Co. | |

[1] Director unless otherwise indicated.

TABLE VIII.—*Men holding 4 or more directorships among the 250 great corporations with the names of the corporations.* Continued

MEN HOLDING 7 DIRECTORSHIPS Continued

| Names | Companies | Positions |
|---|---|---|
| Reynolds, J. F., New York City—Continued | (B) First National Bank, New York | President and director. |
| | (F) Prudential Insurance Co. of America. | |
| Whitney, George, Westbury, N. Y. | (I) General Motors Corporation | |
| | Kennecott Copper Corporation | |
| | Pullman, Inc. | |
| | Continental Oil Co. | |
| | (C) Consolidated Edison of New York, Inc. | Trustee. |
| | (B) Guaranty Trust Co. | |
| | J. P. Morgan Co. | Partner. |

MEN HOLDING 6 DIRECTORSHIPS

| | | |
|---|---|---|
| Adams, C. F., Boston | (I) General Electric Co. | |
| | United States Smelting, Refining & Mining Co. | |
| | (C) American Telephone & Telegraph Co. | |
| | Edison Electric Illuminating Co. | |
| | (R) New York, New Haven & Hartford R. R. Co. | |
| | (F) John Hancock Mutual Life Insurance Co. | |
| Loomis, E. E., New York City. | (I) American Can Co. | |
| | Phillips Petroleum Co. | |
| | (C) American Telephone & Telegraph Co. | |
| | (R) Great Northern Ry. Co. | Member executive committee and director. |
| | Lehigh Valley R. R. Co. | President, member executive committee and finance committee and director. |
| | (B) New York Trust Co. | Member advisory and executive committees and trustee. |
| Potter, W. C., New York City. | (I) Continental Oil Co. | |
| | (C) Electric Power & Light Corporation. | |
| | National Power & Light Co. | |
| | (R) Atchison, Topeka & Santa Fe Ry. Co. | |
| | (B) Guaranty Trust Co. | Chairman of board and director. |
| | (F) Mutual Life Insurance Co. of New York. | Trustee. |
| Taylor, M. C., New York City. | (I) U. S. Steel Corporation | Chairman of board, chief executive officer and director. |
| | (C) American Telephone & Telegraph Co. | Member, executive committee and director. |
| | (R) New York Central R. R. Co. | Do. |
| | Atchison, Topeka & Santa Fe Ry. Co. | Do. |
| | (B) First National Bank (N. Y.) | |
| | (F) Mutual Life Insurance Co. of New York. | Member, finance committee and trustee. |
| Weinberg, S. J., Scarsdale, N. Y. | (I) Sears, Roebuck & Co. | |
| | National Dairy Products Corporation. | |
| | B. F. Goodrich Co. | Member, executive committee and director. |
| | Continental Can Co. | Do. |
| | McKesson & Robbins, Inc. | Do. |
| | General Foods Corporation | |
| Woolley, C. M., Greenwich, Conn. | (I) General Motors Corporation | |
| | General Electric Co. | |
| | American Radiator & Standard Sanitary Co. | Chairman of board, president and director. |
| | (R) Atchison, Topeka & Santa Fe Ry. Co. | |
| | Delaware, Lackawanna & Western R. R. Co. | Member board of managers. |
| | (F) Mutual Life Insurance Co. of New York. | Trustee. |

MEN HOLDING 5 DIRECTORSHIPS

| | | |
|---|---|---|
| Buckner, M. N., Fishers Island, N. Y. | (U) Interborough Rapid Transit Co. | |
| | Consolidated Gas, Electric Light & Power Co. of Baltimore. | |
| | (R) Chicago, Milwaukee, St. Paul & Pacific R. R. Co. | |
| | (B) New York Trust Co. | Chairman of board and trustee. |
| | (F) New York Life Insurance Co. | |

TABLE VIII.—*Men holding 4 or more directorships among the 250 great corporations with the names of the corporations.* Continued

MEN HOLDING 5 DIRECTORSHIPS Continued

| Names | Companies | Positions |
|---|---|---|
| Carlton, Newcomb, New York City | (I) American Sugar Refining Co. | |
| | (C) Western Union Telegraph Co. | Chairman of board and director. |
| | (R) Union Pacific R. R. Co. | |
| | (B) Chase National Bank | |
| | (F) Metropolitan Life Insurance Co. | |
| County, A. J., St. Davids, Pa. | (R) Pennsylvania R. R. Co. | |
| | Norfolk & Western Ry. Co. | |
| | Chicago Union Station Co. | |
| | (B) Chemical Bank & Trust Co. | |
| | Philadelphia National Bank | |
| Crawford, D. A., Golf, Ill. | (I) Armour & Co. | |
| | Pullman, Inc. | President and director. |
| | Montgomery Ward & Co., Inc. | |
| | (B) Continental Illinois National Bank & Trust Co. | |
| | Harris Trust & Savings Bank | |
| Gray, W. S., Jr., Greenwich, Conn. | (I) Texas Corporation | |
| | Union Carbide & Carbon Corporation. | |
| | Paramount Pictures, Inc. | |
| | General Foods Corporation | |
| | (B) Central Hanover Bank & Trust Co. | President and trustee. |
| Hayden, Charles, New York City. | (I) Shell Union Oil Corporation | Member executive committee and director. |
| | Kennecott Copper Corporation | Chairman finance committee and director. |
| | American Woolen Co. | Member executive committee and director. |
| | (C) Brooklyn Manhattan Transit Corporation. | Member executive committee, finance committee, and director. |
| | (R) Chicago, Rock Island & Pacific Ry. Co. | Chairman of board, chairman finance committee, and director. |
| Herrick, R. F., Boston, Mass. | (I) United Fruit Co. | Member executive committee and director. |
| | United Shoe Machinery Corporation. | Do. |
| | U. S. Smelting, Refining & Mining Co. | Do. |
| | (C) Edison Electric Illuminating Co. of Boston. | |
| | (B) First National Bank (Boston) | |
| Lamont, T. W., New York City. | (I) U. S. Steel Corporation | |
| | (R) Atchison, Topeka & Santa Fe Ry. Co. | |
| | Northern Pacific Ry. Co. | |
| | (B) Guaranty Trust Co. | |
| | J. P. Morgan Co., Drexel & Co. | Partner. |
| McInerney, T. H., New York City. | (I) National Dairy Products Corporation. | President, member executive committee and director. |
| | B. F. Goodrich Co. | |
| | Gimbel Brothers, Inc. | |
| | (C) American Waterworks & Electric Co. | |
| | (R) Lehigh Valley R. R. Co. | |
| Prosser, Seward, Englewood, N. J. | (I) General Motors Corporation | Member finance committee and director. |
| | General Electric Co. | Member executive committee and director. |
| | Kennecott Copper Corporation | |
| | (B) Bankers Trust Co. | Chairman management committee, member executive committee, and director. |
| | (F) Equitable Life Assurance Society | |
| Robinson, H. M., Pasadena, Calif. | (I) General Electric Co. | |
| | Union Oil Co. of California | |
| | (U) Southern California Edison Co., Ltd. | |
| | (B) Security-First National Bank | Vice chairman executive committee and director. |
| | (F) Pacific Mutual Life Insurance Co. | Member executive committee and director. |
| Simpson, James, Chicago, Ill. | (I) Marshall Field & Co. | |
| | (U) Commonwealth Edison Co. | Chairman of board and director. |
| | Peoples Gas Light & Coke Co. | Do. |
| | Public Service Co. of Northern Illinois. | Do. |
| | (R) New York Central R. R. Co. | |

TABLE VIII.—*Men holding 4 or more directorships among the 250 great corporations with the names of the corporations*—Continued

MEN HOLDING 5 DIRECTORSHIPS—Continued

| Names | Companies | Positions |
|---|---|---|
| Sprague, A. A., Chicago, Ill. | (I) International Harvester Co | |
| | B. F. Goodrich Co | |
| | Wilson & Co., Inc | |
| | (R) Chicago & Northwestern Ry. Co. | Member finance committee and director. |
| | (B) Continental Illinois National Bank & Trust Co. | |
| Stockton, Philip, Boston. | (I) General Electric Co | |
| | American Sugar Refining Co | |
| | (U) American Telephone & Telegraph Co. | |
| | (B) First National Bank (Boston) | President and director. |
| | (F) New England Mutual Life Insurance Co. | |
| Sunny, B. E., Chicago, Ill. | (I) General Electric Co | Member executive committee and director |
| | Wilson & Co., Inc | |
| | (U) Public Service Co. of Northern Illinois. | Do. |
| | (R) Chicago Great Western Railroad Co. | Chairman of board and director. |
| | (B) First National Bank (Chicago) | |
| Vanderbilt, Cornelius, New York City. | (R) Illinois Central R. R. Co | |
| | Delaware & Hudson Co | |
| | (B) Chase National Bank | |
| | Central Hanover Bank & Trust Co. | |
| | (F) Mutual Life Insurance Co of New York. | Trustee. |
| Wadsworth, Eliot, Boston, Mass. | (I) United Shoe Machinery Corporation. | |
| | United States Smelting, Refining & Mining Co. | |
| | American Woolen Co | |
| | (U) Stone & Webster, Inc | |
| | (F) John Hancock Mutual Life Insurance Co. | |
| Warriner, S. D., Philadelphia, Pa. | (I) Lehigh Coal & Navigation Co. | President, board of managers and directors. |
| | (U) National Power & Light Co | |
| | (B) Philadelphia National Bank | |
| | Pennsylvania Co. for Insurances | |
| | (F) Pennsylvania Mutual Life Insurance Co. | |
| Wing, D. G., Brookline, Mass. | (I) United Fruit Co | |
| | United Shoe Machinery Corporation. | |
| | United States Smelting, Refining & Mining Co. | |
| | (B) First National Bank (Boston) | |
| | (F) Travelers Insurance Co | |

MEN HOLDING 4 DIRECTORSHIPS

| | | |
|---|---|---|
| Anderson, A. M., New York City | (U) International Telephone & Telegraph Corporation. | |
| | (R) Northern Pacific Ry. Co | |
| | (B) J. P. Morgan Co., Drexel & Co. | Partner. |
| | New York Trust Co | Trustee. |
| Astor, Vincent, New York City | (U) Western Union Telegraph Co | |
| | (R) Great Northern Ry. Co | |
| | Illinois Central R. R. Co | |
| | (B) Chase National Bank | |
| Baker, N. D., Shaker Heights, Ohio. | (I) Goodyear Tire & Rubber Co | |
| | Radio Corporation of America | |
| | (B) Cleveland Trust Co | |
| | (F) Mutual Life Insurance Co. of New York. | Trustee. |
| Brown, Donaldson, Irvington-on-Hudson, N. Y. | (I) General Motors Corporation | Chairman, finance committee, vice president and director. |
| | E. I. du Pont de Nemours & Co. | |
| | (R) St. Louis-San Francisco Ry. Co. | |
| | (B) National Bank of Detroit | |
| Brownell, F. H., Greenwich, Conn. | (I) American Smelting & Refining Co. | Chairman of board, chairman finance committee and director. |
| | American Sugar Refining Co. | |
| | (R) Northern Pacific Ry. Co | |
| | (B) Chase National Bank | |
| Carlisle, F. L., New York City. | (I) St. Regis Paper Co | Chairman of board and director. |
| | (U) Consolidated Edison of New York, Inc. | Trustee. |
| | Niagara Hudson Power Corporation. | Chairman of board and director. |
| | (F) Marine Midland Corporation | |

TABLE VIII.—*Men holding 4 or more directorships among the 250 great corporations with the names of the corporations*—Continued

MEN HOLDING 4 DIRECTORSHIPS—Continued

| Names | Companies | Positions |
|---|---|---|
| Clement, M. W., Philadelphia. | (U) Western Union Telegraph Co | Vice president in charge of operation and director. |
| | (R) Pennsylvania R. R. Co | |
| | Norfolk & Western Ry. Co | |
| | Chicago Union Station Co | President and director. |
| Clothier, M. L., Villanova, Pa. | (U) United Gas Improvement Co | |
| | (R) Lehigh Valley R. R. Co | |
| | (B) Philadelphia National Bank | |
| | (F) Pennsylvania Mutual Life Insurance Co. | |
| Colt, S. S., Tuxedo Park, N. Y. | (I) General Foods Corporation | |
| | (U) Commonwealth & Southern Corporation. | |
| | (B) Bankers Trust Co | |
| | (F) Mutual Life Insurance Co. of New York. | Trustee. |
| Cummings, W. J., Chicago. | (I) Texas Corporation | |
| | American Car & Foundry Co | |
| | (U) Commonwealth Edison Co | |
| | (B) Continental Illinois National Bank & Trust Co. | Chairman of board and director. |
| Cutler, Bertram, Green Village, N. J. | (I) Radio Corporation of America | |
| | (R) New York Central R. R. Co | |
| | (B) Chase National Bank | |
| | (F) Equitable Life Assurance Society of U. S. | |
| Davis, A. V., Pittsburgh, Pa. | (I) Aluminum Co. of America | Chairman of board and director. |
| | (U) Niagara Hudson Power Co | |
| | (B) Mellon National Bank | |
| | Union Trust Co | |
| Day, J. P., New York City. | (I) Union Carbide & Carbon Corporation. | |
| | R. H. Macy & Co | |
| | (U) Consolidated Edison of New York, Inc. | Trustee. |
| | (F) Metropolitan Life Insurance Co | |
| De Forest, H. W., New York City. | (I) Tidewater Associated Oil Co | |
| | (U) Western Union Telegraph Co | Member executive committee and director. |
| | (R) Southern Pacific Co | Member executive committee, finance officer, and director. |
| | (B) Guaranty Trust Co | Member executive committee and director. |
| D'Olier, Franklin, Morristown, N. J. | (I) National Biscuit Co | |
| | (R) Pennsylvania R. R. Co | |
| | (B) Chase National Bank | |
| | (F) Prudential Insurance Co. of America. | |
| Goelet, R. W., New York City. | (R) Union Pacific R. R. Co | |
| | Illinois Central R. R. Co | |
| | (B) Guaranty Trust Co | |
| | Chemical Bank & Trust Co | |
| Greene, E. B., Cleveland, Ohio. | (I) Goodyear Tire & Rubber Co | |
| | Cleveland Cliffs Iron Co | President, treasurer, and director |
| | (R) New York Central R. R. Co | |
| | (B) Cleveland Trust Co | Chairman executive committee and director. |
| Groesbeck, C. E., New York City. | (U) American Power & Light Co | Chairman of board, member executive committee, and director. |
| | Electric Power & Light Corporation. | Do. |
| | National Power & Light Co | Do. |
| | American Gas & Electric Co | Do. |
| Harbord, J. G. | (I) Radio Corporation of America | Chairman of board and director. |
| | (R) Atchison, Topeka & Santa Fe Ry. Co. | Member executive committee and director. |
| | (B) Bankers Trust Co | |
| | (F) New York Life Insurance Co | Do. |
| Harriman, W. A., Harriman, N. Y. | (U) Western Union Telegraph Co | |
| | (R) Union Pacific R. R. Co | |
| | Illinois Central R. R. Co | Chariman executive committee and director. |
| | (B) Guaranty Trust Co | |
| Hartford, J. A., Valhalla, N. Y. | (I) Chrysler Corporation | |
| | Great A. & P. Tea Co. of America | President and director. |
| | (R) New York, New Haven & Hartford R. R. Co. | |
| | (B) Guaranty Trust Co | |

TABLE VIII.—*Men holding 4 or more directorships among the 250 great corporations with the names of the corporations.* Continued

MEN HOLDING 4 DIRECTORSHIPS Continued

| Names | Companies | Positions |
|---|---|---|
| Houston, D. F., New York City. | (I) U. S. Steel Corporation | |
| | (U) American Telephone & Telegraph Co. | |
| | (B) Guaranty Trust Co | |
| | (F) Mutual Life Insurance Co. of New York. | President and trustee. |
| James, A. C., New York City. | (I) Phelps Dodge Corporation | |
| | (R) Great Northern Ry. | |
| | Western Pacific R. R. Corporation. | Chairman of board and director. |
| | (B) First National Bank (New York) | |
| Johnston, F. B., Montclair, N. J. | (I) Paramount Pictures, Inc. | Member executive committee and director. |
| | (U) Hudson & Manhattan R. R. Co | |
| | (B) Chemical Bank & Trust Co. | Chairman of board and director. |
| | (F) New York Life Insurance Co. | |
| Kirby, F. M., Wilkesbarre, Pa. | (I) F. W. Woolworth Co. | Vice president and director. |
| | (U) United Gas Improvement Co. | |
| | (R) Lehigh Valley R. R. Co. | Member executive committee and director. |
| | (F) Metropolitan Life Insurance Co. | |
| Loasby, A. W., Montclair, N. J. | (U) Interborough Rapid Transit Co | |
| | (R) Denver & Rio Grande Western R. R. Co. | |
| | Western Pacific R. R. Co. | |
| | (B) Chemical Bank & Trust Co. | |
| McCain, C. S., Chicago. | (I) B. F. Goodrich Co. | |
| | Corn Products Refining Co. | |
| | (U) United Light & Power Co. | President and director. |
| | (R) Seaboard Air Line Ry. Co. | |
| McCulloch, C. A., Chicago. | (I) Texas Corporation | |
| | Paramount Pictures, Inc. | |
| | (R) Chicago Great Western R. R. Co | |
| | (B) First National Bank (Chicago) | |
| Mellon, Paul, Pittsburgh, Pa. | (I) Gulf Oil Corporation of Pennsylvania. | |
| | Pittsburgh Coal Co. | |
| | (B) Mellon National Bank | |
| | Union Trust Co | |
| Mellon, W. L., Pittsburgh, Pa. | (I) Gulf Oil Corporation of Pennsylvania. | Chairman of board and director. |
| | Westinghouse Electric & Manufacturing Co. | |
| | (B) Mellon National Bank | |
| | Union Trust Co. | |
| Moore, Paul, Convent, N. J. | (I) American Can Co. | |
| | National Biscuit Co. | |
| | (R) Delaware, Lackawanna & Western R. R. Co. | |
| | (B) Bankers Trust Co. | |
| Murphy, G. M., Jr., New York City. | (I) Bethlehem Steel Corporation | |
| | Anaconda Copper Mining Co | |
| | Goodyear Tire & Rubber Co. | |
| | Interlake Iron Corporation. | |
| Perkins, J. H., Greenwich, Conn. | (U) Consolidated Edison of New York, Inc | Trustee. |
| | (R) Union Pacific R. R. Co. | |
| | (B) National City Bank | Chairman of board and director. |
| | (F) Mutual Life Insurance Co. of New York. | Trustee. |
| Pitcairn, N. B., Clayton, Mo. | (R) Wabash Ry. Co. | Receiver and director. |
| | Lehigh Valley R. R. Co. | Member executive committee and director. |
| | Chicago & Western Indiana R. R. Co. | Do. |
| | Terminal R. R. Association of St. Louis. | Do. |
| Renny, G. A., Chicago. | (I) International Harvester Co | |
| | (U) Commonwealth Edison Co. | Vice chairman of board and director. |
| | Peoples Gas Light & Coke Co. | |
| | (B) First National Bank (Chicago) | Member executive committee and director. |
| Richards, U. L., Newtonville, Mass. | (I) American Sugar Refining Co | Member executive committee and director |
| | (U) Consolidated Gas Electric Light & Power Co. of Baltimore | |
| | Boston Elevated Ry. Co | Do. |
| | (R) New York, New Haven & Hartford R. R. Co. | Do. |
| Robinson, W. C., Sewickley, Pa. | (I) Jones & Laughlin Steel Corporation. | |
| | (U) American Waterworks & Electric Co. | |
| | (B) Mellon National Bank | |
| | Union Trust Co. | |
| Sawyer, P. B., Bethlehem, Pa. | (I) Lehigh Coal & Navigation Co. | Member board of managers. |
| | (U) American Power & Light Co | |
| | Electric Power & Light Corporation. | |
| | National Power & Light Co | |
| Sloan, A. P., Jr., Long Island, N.Y. | (I) General Motors Corporation | President and director. |
| | E. I. du Pont de Nemours & Co | |
| | Pullman, Inc. | |
| | (B) National Bank of Detroit | |
| Sloan, M. S., Brooklyn, N. Y. | (I) Continental Can Co | |
| | (R) Terminal R. R. Association of St. Louis. | |
| | Missouri-Kansas-Texas R. R. Co | President, chairman of board, and director |
| | (B) Irving Trust Co | |
| Todd, G. N., New York City. | (U) American Power & Light Co | |
| | National Power & Light Co. | |
| | American Gas & Electric Co | President and director. |
| | (B) Irving Trust Co | |
| Tuttle, A. V., Plainfield, N. J., and New York City. | (U) Electric Power & Light Corporation. | |
| | National Power & Light Co | |
| | American Gas & Electric Co | |
| | (B) Bankers Trust Co. | Chairman of board and director. |
| Tomlinson, R. F., Montclair, N. J. | (I) American Can Co | |
| | National Biscuit Co. | President and director. |
| | (R) Delaware, Lackawanna & Western R. R. Co. | |
| | (F) Prudential Insurance Co. of America | |
| Tracy, E. B., New York City. | (U) American Power & Light Co | |
| | Electric Power & Light Corporation. | |
| | National Power & Light Co | |
| | American Gas & Electric Co | |
| Vanderbilt, H. S., New York City. | (I) Pullman, Inc | |
| | (R) New York Central R. R. Co | |
| | Chicago & North Western Ry. Co | |
| | (B) First National Bank (New York City). | |
| Wayne, Joseph, Jr., Philadelphia. | (I) Philadelphia & Reading Coal & Iron Corporation. | |
| | (R) Pennsylvania R. R. Co. | |
| | (B) Philadelphia National Bank | President and director. |
| | (F) Provident Mutual Life Insurance Co. | |
| Willard, Daniel, Baltimore. | (U) American Telephone & Telegraph Co. | |
| | (R) Baltimore & Ohio R. R. Co | Do. |
| | Reading Co. | Chairman of board and director. |
| | (F) Mutual Life Insurance Co. of New York. | Trustee. |
| Wilson, J. P., Chicago. | (I) International Harvester Co. | Member executive committee and director. |
| | Marshall Field & Co | |
| | (B) First National Bank (Chicago) | |
| | Harris Trust & Savings Bank | |

TABLE IX.—*Residence of directors with four or more directorships*

| | | | |
|---|---|---|---|
| New York and environs | 48 | Wilkes-Barre, Pa | 1 |
| Chicago and environs | 11 | Bethlehem, Pa | 1 |
| Boston and environs | 7 | Baltimore, Md | 1 |
| Philadelphia and environs | 5 | Pasadena, Calif | 1 |
| Pittsburgh and environs | 5 | | |
| Cleveland and environs | 2 | Total | 83 |
| St. Louis and environs | 1 | | |

# APPENDIX 13.—INTEREST GROUPINGS IN THE AMERICAN ECONOMY[1]

It is the purpose of this study to throw light on the degree to which the large corporations are linked among themselves through common control, community of interest groups, or more or less loose alliances.

It is of the very nature of the relationships which form the subject matter of this study that they are overwhelmingly qualitative in character. No statistical technique has been or is likely to be devised for reducing them to a quantitative scale. Furthermore informed observers will inevitably differ in their judgments about the weight to be attached to the various bits of evidence out of which a general picture must be pieced together. For this reason it is necessary to be as careful as possible in indicating the method of analysis which has been followed. Clearly no claim to unbiased accuracy can be set forth in a study of this sort; that fact alone puts the author under an obligation to present his material in a way to make critical appraisal possible and easy.

The kind of relationships which we are studying clearly have to do with the way in which corporations are managed and this in turn depends upon how and by whom they are controlled. How they are controlled may or may not be determined by their ownership. Consequently *control* is the central issue around which the study must turn.

Now it is a fairly simple task to classify corporations by the techniques employed in controlling them. The classification used by Berle and Means,[2] while not exhaustive, is an excellent working scheme. They distinguish five major types, each one pretty much self-explanatory: (1) control through almost complete ownership, (2) majority control, (3) control through a legal device without majority ownership, (4) minority control, and (5) management control. It is one thing, however, to be able to place a corporation in one or other of these categories and quite another to be able to identify and name the controlling individual or group. To a certain extent, to be sure, the two problems overlap. It is quite likely that if enough is known to place a corporation in one of the first four categories, enough will also be known to identify, at least in a general way, the controlling interest. This is not necessarily true, however, and in the case of the 5th category, it is likely not to be true. Since Berle and Means estimated that somewhere around one-half of the 200 largest nonfinancial corporations in 1929 were management-controlled, the importance of this reservation will be at once apparent.

Once a corporation has been classified by type of control, however, it is usually possible to go further and make a more or less accurate judgment about who controls it. The most important aid is undoubtedly a knowledge of the history[3] of the corporation and of the individuals who comprise its management (officers and directors).[4]

Once the identity of controlling interests has been established it is possible to begin grouping companies together. This is, however, the most difficult task of all. Some corporations clearly belong together. For example, if one individual or well-defined group of individuals owns a majority of the voting securities of two or more concerns, then it will scarcely be denied that these companies should be placed together in what we may call a single interest group. We can safely say the same about any number of corporations which are completely under the control of the same interests, whatever the form of that control may be. But the concept of an interest group should surely comprise more than merely such corporations as are altogether under the same control. For example, if two brothers or close friends each own a business, and if at many points the policies of the two businesses are made in common, it would seem desirable to group the one with the other as belonging to the same interest group. Or if an investment banker promotes and takes a continuing and significant interest in several different concerns, it would appear that good grounds exist for putting these concerns into a single interest group. Most likely in the latter case the investment banker will be part of the management in each, sharing the control with others. We could generalize, then, and say that companies ought to be grouped together if, in the absence of counter-balancing factors, they have a significant element of control in common.

Does this mean that any two companies whose directorates interlock should be classed together in one interest group? The answer to this question is em-

[1] Appendix 13, was prepared by Paul M. Sweezy.

[2] Berle, A. A., Jr. and Means, G. C., *The Modern Corporation and Private Property*, 1933, ch. V.

[3] The history of every corporation has certain critical phases: organization and promotion, expansion, and possibly bankruptcy and reorganization. The role which certain individuals or groups play during these periods commonly determines their importance in more normal times. It is for this reason that it is so important to have a knowledge of historical facts.

[4] In this connection, undoubtedly, the most valuable source of information is the magazine *Fortune*, which combines a high regard for accuracy with a special interest in personalities. On the other hand, there is very little to be found in the professional writings of economists and economic historians except in a few cases where the subject matter is specifically biographical.

phatically, "No." Anyone starting out on this principle would have little difficulty in putting all but a few of the 200 largest non-financial corporations into a single interest group.[5] This fact is not without significance, but the classification achieved by this method would cover up the kind of grouping it is desired to disclose. For present purposes, material on interlocking directorates is unquestionably important, but it must be used with care and discrimination.[6] Some general rules can be laid down, but in no case are they a complete substitute for knowledge of the relationships on which interlocking directorates are based. Interlocks may be classed as primary and secondary. A primary interlock exists between companies X and Y if a director of X, *whose main business interest is with X*, sits on the board of Y. If this same person also sits on the board of Z, then a primary interlock also exists between X and Z. These two relations, however, necessarily involve an interlock between Y and Z, and this we call a secondary interlock. It goes without saying that more weight should be given to primary than to secondary interlocks and that the latter should be interpreted only with caution.

More important in evaluating the significance of interlocking directorates is a knowledge of the general policies of the companies and individuals involved. Some firms and individuals regard the position of directorship as one of responsibility which involves their own reputations. They are not likely to assume such a responsibility unless they are in harmony with the general policy of the management of the company concerned and in a position to make their influence felt. This is clearly the case with the firm of J. P. Morgan & Co., for example. As a rule, a Morgan partner sits on the boards of only two or three large companies, frequently in related lines of activity. He is supposed to keep himself thoroughly informed and to take an active part in the affairs of these companies. When one considers the tremendous prestige which attaches to the Morgan name, it is easy to understand that the directorship of a Morgan partner is a fact of first importance in determining the orientation of a corporation. On the other hand, some individuals are perfectly willing to act as directors in a purely ornamental capacity, a function which in England is peculiarly reserved for members of the nobility. Directors, with no active business interests and no apparent asset except a name with prestige value, should always be regarded in this light unless there is specific evidence to the contrary.

It is obvious that multiple interlocks should be given more weight than single interlocks. In this connection, it is noteworthy that about half of the large companies in which J. P. Morgan & Co. is represented have two or more Morgan partners on their boards.

There are industrial and financial alliances which manifest themselves in other ways than through complete or partial common control. Most important are alliances based on banking and underwriting relations which do not result in formal interlocks. The connection between financier and manufacturer is generally not a casual one but a continuing one which gives rise to an active interest on the side of each party in the affairs of the other. Nevertheless, relations may remain entirely informal. For example, it was the general policy of Kuhn, Loeb & Co., under the leadership of Jacob Schiff, to eschew formal representation on the boards of its clients. Yet their responsibility for success was no less keenly felt. "Once a commitment had been made," Schiff's biographer comments, "the important task was to guide the borrower's financial projects in such a way as to promote their success. This essential service was not one which was legally due anyone concerned; yet it had to be rendered for the ultimate welfare of all. One way in which bankers can watch the interests of investors who look to them for guidance is to be represented in the management or board of directors of the concern for which they have issued loans. So far as Schiff was concerned he preferred, as a rule, that his firm should not be so represented. He felt that by personal conference and advice he could do as much as through formal representation."[7] When relations are of the kind preferred by Schiff, they can only be recognized and evaluated by knowledge of the history of the companies involved.

Some alliances are of a kind which does not permit of generalization. Such, for example, is the close connection which has long existed between J. P. Morgan & Co. and the First National Bank of New York. It began as a personal relationship between the elder J. P. Morgan and the elder George F. Baker, but long since took on an institutional character. Outwardly this alliance manifests itself in close cooperation between representatives of the two concerns in the affairs of various third companies. Appointment to a partnership in J. P. Morgan & Co. is regarded as the most desirable form of promotion by junior officers of First National. Before the Banking Act of 1933 two Morgan partners were on the directorate of First National's

[5] See Appendix 12.

[6] Cf. the statement made in a recent government investigation of railroads: "In investigations of control it has generally been the custom to lean rather heavily on interlocking directorates as a line of evidence. The present study prompts the view that such evidence can easily be overworked unless it is very exhaustively examined." *Regulation of Stock Ownership in Railroads*, 71st Cong., 3d sess., H. R. No. 2789, pt. 1, p. LXXVI. This report will hereafter be referred to as *Splawn Report: Railroads*.

[7] Adler, C. S., *Jacob H. Schiff: His Life and Letters*, 2 vols., 1928, vol. I, p. 27.

securities affiliate, the First Security Co., since dissolved. It would be misleading to call the Morgan-First National alliance unique, but it is certain that it would be difficult to fit into any general category. The list of such connections which defy generalization would be a long one; probably many exist which have altogether escaped the attention of the present writer. The best that can be done is to note them down and incorporate them in the general picture as they are discovered and checked.

From what has been said the reader will gather that the method followed in this study is thoroughly empirical and involves at every stage an exercise of practical judgment. An interest group is not a clear-cut concept which can be given concrete content according to mechanical rules. Accordingly the writer makes no claim to either completeness or finality. What follows should be regarded as tentative and subject to revision at many points if and when more adequate evidence is brought to bear on the problem. Only one general rule has been observed throughout and that is to disregard connections which are not based on pretty direct relations between two parties concerned.

There are, of course, no *a priori* limits to the scope which might be determined upon for this study. Ideally it should perhaps cover all significant interest groups judged by their relation to the economy as a whole. But such an ambitious project would take years to carry through, and the results would be difficult to present in a concise and readily intelligible form. Consequently, more or less arbitrary limits had to be imposed, firstly, on the segment of the economy considered; and, secondly, on the number of groups analyzed.

As to the first limit, the starting point was the list of the 200 largest nonfinancial corporations as of the end of 1935, presented and discussed in Appendix 10 above. The list had to be used before it had assumed final form so that there may be minor discrepancies between figures used in this section and those appearing in the final version of the list. The 200 largest nonfinancial corporations, for the purposes of this paper, then, include 107 industrials, 54 public utilities, and 39 railroads. It is inconvenient to handle the railroads as 43 separate companies since many of them are grouped together through minority stockholdings into large systems. In accordance with the procedure of the Splawn report on railroads, the bulk of the mileage has been grouped together into 13 major systems.[8] This, of course, involves the inclusion of a number of smaller roads (not in the Appendix 10 list) which belong to one or other of the major systems. The net result is that discussion is limited to 13 major systems and 8 other roads with assets of $100 million or over.[9]

In addition to nonfinancial companies, it is necessary to consider at least banking companies in order to get a satisfactory view of the scope of important interest groups. This has been accomplished by including in the companies to be analyzed the 50 largest commercial banks as of the end of 1935.[10]

The total assets of the companies considered are set out in the following table:

*Total assets at the end of 1935*

| | *Millions of dollars* |
|---|---|
| 107 industrials | 24, 943 |
| 54 utilities | 25, 428 |
| 13 major railroad systems and 8 other roads with assets in excess of 100 million dollars | 24, 258 |
| 50 banks | 23, 722 |

It is possible to give a fairly accurate idea of the proportion of the total *corporate* assets of each class owned by the companies included in this table. According to figures presented in Appendix 11, at the end of 1933 the 104 largest corporations classified as "Manufacturing," "Mining and Quarrying," "Trade," and "Other," possessed 33.8 percent of the total corporate assets in these categories. The list is not quite the same as that for 1935, but the difference is of small order of magnitude. These classifications correspond to what have been summed up here under the heading "Industrials."

The 1933 figures indicate that the 96 largest corporations engaged in "Transportation and Other Public Utilities" owned 87.4 percent of all corporate assets in these fields. No precise breakdown between railroads and public utilities is available, but it is likely that the figure for rails should be somewhat higher and for utilities somewhat lower than 87.4 percent in their respective fields. In the case of rails, data compiled from the *Splawn Report: Railroads* show that the 13 major systems and 8 other roads included in the above table, owned at the end of 1929 about 95 percent of total railroad mileage. Assets figures would doubtless be roughly in proportion. Taking 95 percent as the correct figure for rails would mean, of course, that 75 percent would be about right for utilities.

In the case of banks it is possible to give a figure which is very nearly accurate. The 50 largest banks held, on December 31, 1936, deposits which amounted

[8] *Splawn Report: Railroads*, part I, p. LII. The report names 14 major systems, but suggests (p. LI) that "the assignment of the Illinois Central to the Union Pacific system would perhaps be justified by reason of the fact that the latter owns by far the largest block of Illinois Central stock, representing 28.94 percent of the total." This assignment has been made here, and, consequently, the number of systems is reduced to 13.

[9] There has been very little change in the composition of the major systems since the Splawn report. Nevertheless, in order to make the data as recent as possible, the grouping has been carried out in accordance with a chart compiled and published by Robert A. Burrows (Pittsburgh) entitled *Inter-Relation and Capitalization of the Principal American Railroads—As of January 1, 1933*. This chart is believed to be accurate and to embody all developments up to the time of its publication. In compiling asset figures for the systems, the assets of roads in which two systems have an equal interest have been divided between the two.

[10] "Largest" by total resources as reported in Moody's *Banks* for 1936.

to 47.9 percent of the average deposits of all commercial banks for 1936.[11] Assets figures would certainly not differ materially.

Summing up then, it may be estimated that the corporations included in this study own about 34 percent of the assets of all industrial corporations, 48 percent of the assets of all commercial banks, 75 percent of the assets of all public utilities, and 95 percent of the assets of all rails. It would probably not be denied that this sector of the economy is the seat of economic power out of proportion to its relative size.

The other limitation mentioned above, namely, the number of interest groups, has been more or less naturally dictated by the material itself.

From a careful company-by-company study there gradually emerged eight more or less clearly defined groups which so far overshadowed all the others that it seemed only logical to confine further attention to these eight.

It is manifestly impossible to rank these groups either by size or by influence. The interests of no two are equally divided among the different spheres of economic activity considered, nor are they at all strictly comparable from the point of view of the strength of the ties which bind them together. This point is important to emphasize. It if is kept in mind there is little danger of interpreting figures, despite their misleading appearance of precision, as more than general indicators of orders of magnitude.

The groups which will be considered may be designated for convenience as follows: (1) Morgan-First National, (2) Rockefeller, (3) Kuhn, Loeb, (4) Mellon, (5) Chicago, (6) DuPont, (7) Cleveland, and (8) Boston. The reasons for these particular labels should become clear in the course of the further discussion.

1. *Morgan-First National.*[12]—This group is for the most part based upon partial control by one or the other or more commonly both of the financial institutions after which the group is named. This partial control in turn is based upon long-standing financial relations and the very great prestige attaching to the Morgan and First National firms. Neither of these banking houses, however, operates through ownership to any significant extent. Some of the relationships which entitle corporations to membership in this group are more complex than ordinary partial control and require separate explanation.

The industrials included are 13 in number, listed with the number of Morgan-First National representatives in their management:[13]

Pullman, Inc. (6).
General Electric Co. (4).
United States Steel Corporation. (3).
Kennecott Copper Corporation. (3).
Phelps Dodge Corporation (2).
American Radiator & Standard Sanitary Corporation (2).
Continental Oil Co. (2)
Montgomery Ward & Co., Inc. (1).
National Biscuit Co. (1).
Philadelphia & Reading Coal and Iron Corporation (1).
Baldwin Locomotive Works (1).
Glen Alden Coal Co.
St. Regis Paper Co.

The last two named are special cases. Glen Alden owns and operates the coal properties which once belonged to the Delaware, Lackawanna and Western Railroad.[14] The ownership of the two are probably substantially identical, and we know that the D. L. & W. belongs to the extent of about 22 percent to the Bakers, the Vanderbilts, and the New York Central.[15] Two representatives of the First National are directors of Glen Alden's subsidiary, Delaware, Lackawanna & Western Coal Co., which handles sales. St. Regis can be more advantageously discussed under utilities.

There is good reason to believe that all the companies which are listed as having Morgan-First National representation on their managements have more than merely formal relations with the two financial institutions. To review all the evidence would carry us much too far afield into the sphere of economic history. The list errs if at all, in the writer's opinion, on the side of understatement. These 13 industrials have combined assets of 3,920 million dollars.

The utilitiesincluded in the group are as follows:
American Telephone & Telegraph Co.
International Telephone & Telegraph Co.
Consolidated Gas Co. of New York.[16]
United Corporation group:
- Commonwealth & Southern Corporation.
- United Gas Improvement Co.
- Public Service Corporation of New Jersey.
- Niagara Hudson Power Corporation.
- Columbia Gas & Electric Corporation.

[11] Data on the 50 largest are taken from the American Banker, January 19 1937, p. 11; and for all commercial banks from the *Annual Report of the Federal Deposit Insurance Corporation for the Year Ending December 31, 1936*, p. 125.

[12] The banking act of 1933 enforced the divorce of deposit banking from underwriting. J. P. Morgan & Co. elected to continue in business as a deposit bank, and a new firm, Morgan Stanley & Co., Inc., was formed by a number of the partners of J. P. Morgan & Co. and Drexel & Co. (the Philadelphia branch of J. P. Morgan & Co.), to take over the investment banking business. Though J. P. Morgan & Co. and Morgan, Stanley & Co., Inc., are, of course, legally entirely separate entities, they have nevertheless been treated as one for purposes of this analysis.

[13] This refers, as throughout this study, to the end of 1935.

[14] Moody's *Industrials*, 1935, p. 1276. The railroads were obliged under the anti-trust laws to divest themselves of coal properties.

[15] *Splawn Report: Railroads*, part I, pp. 134–5.

[16] Now Consolidated Edison Co. of New York.

Electric Bond and Share Group:[17]
American Power & Light Co.
American Gas & Electric Co.
National Power & Light Co.
Electric Power & Light Corporation.

American Telephone & Telegraph has three directors in common with First National, but its informal relations with J. P. Morgan & Co. are probably even more important.[18] Two Morgan partners are on the directorate of International Telephone & Telegraph.

The next group of companies, with which Consolidated Gas may well be considered, heads up into a superholding company called the United Corporation. United was formed in 1929 by J. P. Morgan & Co. and Bonbright & Co., acting in closest harmony.[19] Its avowed purpose was to foster "closer relations among the great public utility systems in the east." [20] The first set of directors of United comprised five partners of a leading New York law firm and soon after its formation, "these directors resigned to make way for Messrs. Whitney and Gates of J. P. Morgan & Co. and Messrs. Thorne and Loomis of Bonbright & Co., Inc." [21] There is not the slightest doubt that these two companies were in sole control of later operations. The steps subsequently taken and the interrelations among companies in the United Corporation group are much too complicated to detail. In spite of the fact that stockholders in Consolidated Gas are insignificant, nevertheless this company is very closely tied in with the rest of the group, particularly through the fact that one man, Floyd Carlisle, is chairman of the boards of Consolidated Gas, Niagara Hudson, and St. Regis Paper Co. This, plus substantial stockholdings, also explains the inclusion of St. Regis Paper in the group.[21a]

The inclusion of the Electric Bond & Share System rests on less secure foundations than in the case of the United Corporation System. Nevertheless it is believed that the supporting evidence is amply convincing. Electric Bond & Share Co. was originally formed by General Electric Co. as a subsidiary to take over securities acquired by the latter in exchange for generating machinery and equipment.[22] Though General Electric divested itself of legal control in 1925, there was no change in management and there is no reason to suppose that the two concerns do not continue to cooperate as before. General Electric, it will be recalled, is one of the industrial corporations closest to the Morgan and First National banking houses. Furthermore Electric Bond & Share has had in the past, and may still have, relatively small minority holdings in stocks of United Corporation, American Superpower Corp., Commonwealth & Southern, Public Service of New Jersey, and Niagara & Hudson.[23] "From the point of view of legal control," according to Bonbright and Means, "these stock interests of the Electric Bond & Share Co. in the United Corporation System are probably negligible. They become significant, however, by virtue of the fact that Electric Bond & Share Co. has long been closely affiliated with the banking house of Bonbright & Co., Inc.,[24] and they point strongly to the conclusion that the policies of the Electric Bond & Share Co. and of the interests controlling the United Corporation will be harmonious rather than antagonistic." [25] Nothing has happened since this was written to change this judgment.

The 12 utility companies included in the Morgan-First National group have combined assets of 12,191 million dollars.[26]

The assignment of railroad systems to the Morgan-First National group has been done sparingly. Only five major systems and one other road are included in the list, though an excellent case could be made out for according similar treatment to two more major systems and at least two other smaller roads. Those included are as follows:

New York Central System.[27]
Alleghany System.[28]
Northern System.[29]
Atchison System.[30]
Southern System.[31]
Western Pacific.[32]

Morgan and/or First National representatives partake in the managements of all the major systems listed, except Alleghany, and of Western Pacific. Financial

[17] American & Foreign Power has been omitted from this study because all of its properties are held abroad.

[18] The development of these relations has been traced in detail by the Federal Communications Commission in its investigation of the Bell System. See Federal Communications Commission, *Special Investigation Docket No. 1*, "American Telephone and Telegraph Company—Corporate and financial history", 3 Vols., Reports No. 22, 23, and 24.

[19] For the story of the formation and development of United Corporation see "High Finance in the 'Twenties: the United Corporation," *Columbia Law Review*, May 1936, June 1936.

[20] *Columbia Law Review*, June 1936, p. 936.

[21] *Ibid*, May 1936, p. 787.

[21a] For interrelations within the United Corporation and Electric Bond and Share Group, see *Inter-relation and Capitalization of the Principal Public Utility, Holding, Operating and Investment Companies, as of January 1, 1936*. Compiled and published by R. A. Bunons, Pittsburgh.

[22] *Relation of Holding Companies to Operating Companies in Power and Gas Affecting Control*, 73rd Cong., 2d Sess., H. R. No. 827, part 3, pp. 437 and ff. This report will henceforth be referred to as *Splawn Report Utilities*

[23] Bonbright, J. C. and Means, G. C., *The Holding Company*, 1932, p. 133.

[24] Up to 1935, Sidney A. Mitchell, president of Bonbright & Co., was a director of Electric Bond & Share and three of its major subsidiaries.

[25] Bonbright and Means, loc. cit.

[26] The assets of United Corporation, American Superpower, Electric Bond & Share, and American & Foreign Power are not included in this total.

[27] Includes New York Central; Delaware, Lackawanna & Western; and a one-half interest in Rutland.

[28] Includes Chesapeake & Ohio; Missouri Pacific; Erie; New York, Chicago & St. Louis; Pere Marquette; Chicago & Eastern Illinois; Wheeling & Lake Erie; and a one-half interest in Denver & Rio Grande Western.

[29] Includes Great Northern; Northern Pacific; Chicago, Burlington & Quincy; Spokane, Portland & Seattle; and Gulf, Mobile & Northern.

[30] Includes only Atchison, Topeka & Santa Fe.

[31] Includes Southern; and a one-half interest in Chicago, Indianapolis & Louisville.

[32] Includes Western Pacific; and a one-half interest in Denver & Rio Grande Western

relations have been in every case close and of long duration.[33]

Alleghany is a special case. This giant railroad system was built up, through the lavish use of holding companies, by the late Van Sweringen brothers of Cleveland. Almost from the inception of their career in the railroad field, the Van Sweringens relied heavily on both J. P. Morgan & Co. and the First National for advice and financial support. It is reasonably certain that without that assistance the Van Sweringens never would have built a railroad empire, nor would they have been able to remain in control once it was built.[34]

Since the last of the Van Sweringen brothers died in November 1936, a struggle for control of the profitable parts of the empire has developed between Robert R. Young and The Guaranty Trust Company which is closely allied to the Morgan house. It is still too early to predict the outcome of this contest, but there is a possibility that the bankers will lose out. Since this study, however, relates to the end of 1935, it is clearly correct to classify the Alleghany system in the Morgan-First National interest group.

The combined assets of the listed railroads amount to 9,678 million dollars.

In the banking field only three banks beside J. P. Morgan & Co. and the First National have been admitted to the list, though this decision was not taken until several further promising candidates had been rejected. The banks are as follows:

Guaranty Trust Co.

Bankers Trust Co.

New York Trust Co.

In the case of the first, three Morgan partners are directors and in the case of the others, two each. The combined assets of the five banks amount to 4,421 million dollars.

To sum up: the Morgan-First National group includes 13 industrial corporations, 12 utility corporations, 5 major railroad systems and one other road, and 5 banks. Total asset figures are as follows:

| | *Millions of dollars* |
|---|---|
| Industrials | 3,920 |
| Utilities | 12,191 |
| Rails | 9,678 |
| Banks | 4,421 |
| Total | 30,210 |

(2) *Rockefeller.*— The Rockefeller group has been limited to companies about which there can be very little argument. It extends only into industrials and banks and comprises all told only seven corporations.

In the industrial field, the Rockefeller interests hold what amounts to a controlling minority position in six large oil companies, successor firms to the old Standard Oil Company, which was dissolved by court decree in 1911. These companies, together with the percentage of voting power held by John D. Rockefeller and or Rockefeller-endowed institutions, are as follows:[35]

| Name of company: | *Percent voting power* |
|---|---|
| Standard Oil Co. of New Jersey | 16.5 |
| Socony Vacuum Oil Co., Inc. | 20.8 |
| Standard Oil Co. of Indiana | 13.8 |
| Standard Oil Co. of California | 16.6 |
| Atlantic Refining Co. | 7.1 |
| Ohio Oil Co. | 24.0 |

These six companies have more than half the total assets of the oil industry. Rockefeller control is mostly exercised in a negative fashion, but is none the less real on that account. This was illustrated dramatically in 1929 when the management of Standard of Indiana, under the leadership of Robert W. Stewart, challenged the Rockefeller dominance and was decisively routed in a battle of proxies.[36] It will be noticed that the Rockefeller interest is smaller in Standard of Indiana than in any of the other companies except Atlantic Refining.

The total assets of the Rockefeller oil companies amount to 4,262 million dollars.

One bank, the Chase National, has been assigned to the Rockefeller group. John D. Rockefeller is probably the bank's largest stockholder, and Winthrop Aldrich, its chairman, is a long-time Rockefeller legal and business representative.[37] Chase National is the country's largest bank, with assets of 2,351 million dollars.

(3) *Kuhn, Loeb.*— The main activity of the investment banking house of Kuhn, Loeb & Co. has, at least until quite recently, always centered in the field of railroads. In financing, reorganizing, rehabilitating and advising railroads, Kuhn, Loeb has since the 1890's been the peer of J. P. Morgan & Co. As previously noted, it has never been the policy of Kuhn, Loeb to maintain more than a few of its contacts by means of directorships, but the reality of the community of interest between the firm and its clients is certainly not open to question on that account.[38] Only

[33] See for example Corey, Lewis, *The House of Morgan*, 1930, especially pts. IV, V, and VII; Daggett, Stuart, *Railroad Reorganization*, 1908, passim.

[34] For the story of the Van Sweringens' career see the following: *Stock Exchange Practices*, hearings before the Committee on Banking and Currency, U. S. Senate, 73d Cong. 1st Sess. on S. Res. 84 (72d Cong.) . . . and S. Res. 56 (73d Cong.), Pt. 2; *Investigation of Railroads, Holding Companies and Affiliated Companies*, hearings before a Subcommittee of the Committee on Interstate Commerce, U. S. Senate, 74th Cong., 2d Sess. pursuant to S. Res. 71, Pts. 1, 2, 3, 4, 7, 10; also *Splawn Report: Railroads*, Pt. 2.

[35] As reported in *Report on Pipe Lines*, 72d Cong., 2d sess., H. R. No. 2192, pt. 1, p. xxxvi.

[36] The incident and its implications have been discussed at length by Berle and Means, *The Modern Corporation*, pp. 82–84.

[37] "Chase National Bank," *Fortune*, Jan. 1936. No study of stock ownership in banks, such as the House Committee on Interstate and Foreign Commerce has carried out for rails, utilities, and communications, has ever been made. It would be very desirable that this should be done.

[38] The peculiarly intimate connection which exists between a railroad and its banker is very clearly set forth and vigorously defended in a statement prepared by Kuhn, Loeb & Co. for the Interstate Commerce Commission in 1922, and reprinted under the title "The marketing of American railroad securities" in *Sale of Foreign Bonds or Securities in the United States*, hearings before the Committee on Finance, U. S. Senate, 72d Cong., 1st sess., pt. 2, pp. 305–322.

those contacts which have been very close and of long duration have been admitted as evidence of membership in the Kuhn, Loeb interest group. Besides railroads, of which five major systems and two other roads are included, only one utility and one bank are on the list. These are as follows:

Major railroad systems:
- Pennsylvania.[39]
- Union Pacific.[40]
- Southern Pacific.[41]
- Chicago, Milwaukee, St. Paul & Pacific.[42]
- Chicago & Northwestern.[43]

Other roads with assets over 100 million dollars:
- Missouri-Kansas-Texas.[44]
- Delaware & Hudson.[45]

Utilities:
- Western Union Telegraph Co.[46]

Banks:
- Bank of the Manhattan Co.[47]

It is quite likely that Kuhn, Loeb exercises less in the way of active control than J. P. Morgan & Co., and for that reason the group at present under consideration should be considered as less closely knit and more in the nature of a loose alliance.

Asset figures for the Kuhn, Loeb group are as follows:

| | *Millions of dollars* |
|---|---|
| Industrials | |
| Utilities | 342 |
| Rails | 9,963 |
| Banks | 548 |
| Total | 10,853 |

(4) *Mellon.*—The Mellon group is probably the best integrated and most compact of all the interest groups considered. It is based on a solid core of industrials and banks which are closely held by members of the Mellon family and a small number of close associates. Aside from companies of this description, two other types have been included, namely: (1) Those on the management of which three or more members of the Mellon group are active and probably dominant, and (2) those allied to the closely held Mellon companies by significant primary interlocks, and in the affairs of which no other group is represented. On this basis the Mellon list is as follows:

Industrials:
- Closely held:
  - Gulf Oil Corporation.
  - Koppers Co.[48]
  - Aluminum Co. of America
  - Pittsburgh Coal Co.
- Probably Mellon dominated:
  - Westinghouse Electric & Manufacturing Co.
- Allied:
  - Jones & Laughlin Steel Corporation
  - American Rolling Mill Co.
  - Crucible Steel Co. of America
  - Pittsburgh Plate Glass Co.

Rails:
- Virginian Ry. Co.[49]

Utilities:
- United Light & Power Co.[49]
- Brooklyn Union Gas Co.[49]

Banks (closely held):
- Mellon National Bank.
- Union Trust Co.

Total assets of the Mellon group are as follows:

| | *Millions of dollars* |
|---|---|
| Industrials | 1,648 |
| Utilities | 859 |
| Rails | 153 |
| Banks | 672 |
| Total | 3,332 |

(5) *Chicago.*—The Chicago group has been defined solely on the basis of interlocking directorates. Of 11 companies designated as belonging to this group, all with headquarters in Chicago, 1 interlocks with the other 10, 1 with 9, 1 with 8, 2 with 7, 3 with 6, 1 with 5, and 1 with 4. In every case at least one of the interlocks is double and several are triple. It is scarcely to be questioned that such a welter of interlocks signifies a substantial community of interest between the firms involved. The following are the 11 companies:

Industrials:
- International Harvester Co.
- Armour & Co.
- Marshall Field & Co.
- Wilson & Co.

Utilities:
- Commonwealth Edison Co.
- Public Service Corporation of Northern Illinois.
- Peoples Gas, Light & Coke Co.

[39] Includes Pennsylvania; Norfolk & Western; Wabash; Lehigh Valley; New York, New Haven & Hartford; Detroit, Toledo & Ironton; Boston & Maine; and a half interest in Rutland. For relations with Kuhn, Loeb, cf. Adler, *Jacob H. Schiff*, vol. I, especially pp. 71–82.

[40] Includes Union Pacific and Illinois Central. *Ibid.*, pp. 88–123, 131–144.

[41] *Ibid.*, pp. 117–121.

[42] *Ibid.*, pp. 150–151.

[43] *Ibid.*, pp. 50–51.

[44] *Ibid.*, p. 131.

[45] *Ibid.*, pp. 148–150.

[46] *Ibid.*, pp. 171–172.

[47] Cf. "Mr. Kuhn and Mr. Loeb," *Fortune*, March 1930. This article also has additional information on relations with railroads.

[48] In computing Mellon asset figures, the assets of Koppers have been divided as accurately as possible between industrials and utilities.

[49] The Mellon interests have, through Koppers and directly, by far the largest stockholdings in these companies. On Virginian, see the report in the *New York Times*, August 10, 1937, of hearings before the Senate Committee on Railroad Finance; and on the other two the Security and Exchange Commission's *Official Summary of Holdings of Officers, Directors and Principal Stockholders*, as of December 31, 1935.

Banks:
Continental Illinois National Bank & Trust Co.
First National Bank of Chicago.
Northern Trust Co.
Harris Trust & Savings Bank.

The connections between these companies are portrayed graphically in chart II of chapter IX. Their assets are as follows:

| | *Millions of dollars* |
|---|---|
| Industrials | 858 |
| Utilities | 813 |
| Rails | |
| Banks | 2,595 |
| Total | 4,266 |

(6) *Du Pont.*— The Du Pont group comprises only four companies, three industrial and one bank, but they are all in the top rank with respect to size. Like the Rockefellers, the Du Ponts exercise control through substantial minority stockholdings. Theirs is a compact, closely knit group. The key company is E. I. du Pont de Nemours, which the Du Ponts control through a family holding company, the Christiana Securities Co. The latter owns about 25 percent of the voting stock of E. I. du Pont de Nemours.[50] E. I. du Pont de Nemours in turn owns approximately the same proportionate interest in General Motors Corporation.[51] Du Ponts and Du Pont representatives dominate the management of both companies. The third industrial in this group is United States Rubber Co., in which another Du Pont family holding company, called Rubber Securities Co., owns about 20 percent voting power.[52] F. B. Davis, Jr., a Du Pont executive, was installed as president soon after the Du Ponts bought into United States Rubber. The Du Pont bank is the National Bank of Detroit, on the board of which sit five General Motors officials.

Assets of the Du Pont group are as follows:

| | *Millions of dollars* |
|---|---|
| Industrials | 2,232 |
| Utilities | |
| Rails | |
| Banks | 396 |
| Total | 2,628 |

(7) *Cleveland.*— The Cleveland group centers around the Mather interests in Cleveland. The corporations involved are as follows:

Industrials:
Cleveland-Cliffs Iron Co.
Republic Steel Corporation.
Youngstown Sheet & Tube Co.
Industrials—Continued.
Inland Steel Co.
Wheeling Steel Corporation.
Goodyear Tire & Rubber Co.
Interlake Iron Corporation.

Banks:
Cleveland Trust Co.

The interrelation of these companies, so far as stock ownership is concerned, is as follows: The Mather interests control the Cleveland-Cliffs Iron Co. by means of 100 percent of the voting common stock held through the Cliffs Corporation plus a substantial share of the voting preferred stock held directly. The Cleveland-Cliffs Co. has minority voting interests in the four steel companies. Relations are by no means confined to stock ownership, but so complicated is the whole picture that it defies brief and simple exposition. We shall have to be content with stating a few additional facts. The key company in the iron and steel group, Cleveland-Cliffs Iron Co., owns, next to United States Steel, the largest supply of unworked iron ore in the country.[53] The alliance between Cleveland-Cliffs and four of the so-called steel independents, Republic, Youngstown Sheet & Tube, Inland and Wheeling, is consequently seen to have a solid and durable economic foundation. These companies do not have any elements of management in common because a large number of interlocks were successfully attacked under the antitrust laws in 1935 and had to be abandoned.[54] There is no reason, however, to suppose that this altered their relations to one another except in a purely formal way. The Cleveland Trust Co. interlocks with Cleveland-Cliffs and Republic Steel in addition to the following smaller Mather interest concerns: Interlake Iron (twice), Interlake Steamship, and the Samuel Mather Estate, Inc. Goodyear Tire & Rubber belongs to the Cleveland group by virtue of its having two directors in common with Cleveland Trust and two others with Cleveland-Cliffs.[55]

Total asset figures for the Cleveland group are as follows:

| | *Millions of dollars* |
|---|---|
| Industrials | 1,066 |
| Utilities | |
| Rails | |
| Banks | 338 |
| Total | 1,404 |

[50] Prospectus of the E. I. du Pont de Nemours Co., dated June 30, 1937.
[51] *Ibid.*
[52] Securities and Exchange Commission, *op. cit.*
[53] "Iron and steel," *Fortune*, May 1931.
[54] *Equity No. 5153, District Court of the U. S., Northern District of Ohio, U. S. A., petitioner* v. *William G. Mather et al., defendants.* Petition, filed February 7, 1935. For the final disposition of the case, whereby the defendants voluntarily agreed to give up their interlocking directorships, see press release of the Department of Justice, February 11, 1936.
[55] Cyrus S. Eaton, of Cleveland, who joined with the Mathers in forming the Cliffs Corporation just before the depression set in, was at one time in control of Goodyear. He lost control during the depression and for a time a number of banks, of which Cleveland Trust was one, were large stockholders. The story is told in detail by H. and R. Wolf in their book *Rubber*, 1936, book V, ch. III.

(8) *Boston.*—The Boston group heads up into the First National Bank of Boston and the Old Colony Trust Co.[56] Chart II of chapter IX[57] shows the very great extent to which the First National-Old Colony banking interests interlock with the other companies which have been assigned to this group, and they with each other. Most of the relations have roots reaching back 30 or more years, and there is little doubt of the reality of the community of interest which is symbolized in these interlocking directorates. The companies included follow:

Industrials:
- United Shoe Machinery Corporation.
- U. S. Smelting, Refining & Mining Co.
- United Fruit Corporation.[58]
- American Woolen Co.

Utilities:
- Stone & Webster, Inc.
- Edison Electric Illuminating Co. of Boston.

Banks:
- First National Bank (including Old Colony Trust).

Total asset figures are:

| | *Millions of dollars* |
|---|---|
| Industrials | 425 |
| Utilities | 554 |
| Rails | |
| Banks | 740 |
| Total | 1,719 |

Eight interest groups have been sketchily outlined insofar as they cover a sector of the economy which includes corporations with total assets of very nearly 100 billion dollars, fairly evenly distributed between industrials, rails, utilities and banks.

What percentages of these totals fall into the various groups and into all the groups together? This question is answered in the following table:

*Percentages of assets considered which fall into the various interest groups*[1]

| | Morgan-First National | Rockefeller | Kuhn, Loeb | Mellon | Du Pont | Chicago | Cleveland | Boston | Total |
|---|---|---|---|---|---|---|---|---|---|
| Industrials | 15.7 | 17.1 | 0 | 6.6 | 8.9 | 3.4 | 4.3 | 1.7 | 57.7 |
| Rails | 39.9 | 0 | 41.1 | .6 | 0 | 0 | 0 | 0 | 81.6 |
| Banks | 18.6 | 9.9 | 2.3 | 2.8 | 1.7 | 10.9 | 1.4 | 3.1 | 50.7 |
| Utilities | 47.9 | 0 | 1.3 | 3.4 | 0 | 3.2 | 0 | 2.2 | 58.0 |

[1] This is the percent of total assets in the interest groups to the total assets in each of the four industrial groups in the 250 large corporations. See p. 308.

[56] These two banks merged their interests in 1929. Old Colony is now in effect the trust department of First National. See any of Moody's bank manuals for 1930 or after for details.

[57] See p. 162.

[58] Some question might be raised about the inclusion of United Fruit since there is no doubt that active control is in the hands of its managing director, Samuel Zemurray, of New Orleans. See "United Fruit," *Fortune*, March 1933. The fact that Zemurray retains the old directorate unchanged, however, would seem to indicate that he has reached a friendly understanding with the Boston group

The reader should be cautioned against reading into this table implications which are not there. It does not relate to the whole economy but only to that segment which is roughly coterminous with the area controlled by the 200 largest nonfinancial corporations, and the 50 largest banks It is possible to argue that the influence of this segment is far greater than any statistical measure would indicate, but, of course, such an argument must rest on grounds different from any presented in this study. Secondly, it is not intended to imply that these aggregations of capital ever act as a unit under the rule of individual or oligarchic dictatorships. The social and economic content of the relationships which bind them together is far more subtle and varied than this. This study should be regarded as doing no more than posing the problem of the larger significance of the facts which it seeks to portray.

The method of procedure followed up to this point tends to give the impression that each of the groups considered is more or less isolated and unrelated to the others except, of course, by way of normal commercial transactions. This is very far from the actual state of things. Some idea of the way they overlap and interconnect is conveyed by the following list, very incomplete though it is, of contacts.

(1) *Between Morgan-First National and Mellon.*—Six representatives of Morgan-First National and three of Mellon are on the board of Pullman, Inc. This relationship resulted from the merger in 1930 of Pullman and Standard Steel Car, previously one of the closely held Mellon industrials. Texas Gulf Sulphur Co., which with the Freeport Sulphur Co., has a practical monopoly of the country's sulphur output, has two Morgan partners on its board, while Mellon's Gulf Oil Corporation owns one-third of its capital stock.

(2) *Between Morgan-First National and Chicago.*—Three prominent members of the Chicago group are on the directorates of Pullman, Inc., and Montgomery Ward & Co., Inc., both of which have been assigned to the Morgan-First National group.

(3) *Between Morgan-First National and Du Pont.*—Three high representatives of Morgan-First National are directors of General Motors, controlled through minority ownership by the Du Ponts. Additionally, the Morgan firms are chief bankers and underwriters for the Du Pont interests.

(4) *Between Morgan-First National and Boston.*—At least three men who rate as members of the Boston group are directors of General Electric, and five are directors of American Telephone & Telegraph. These two corporations are among those which have had longest and closest relations with both Morgan and the First National of New York.

(5) *Between Morgan-First National and Cleveland.*—The Cleveland group is represented on the directorates

of Alleghany Corporation and several of its subsidiaries. Alleghany has been assigned to the Morgan, First National group. Furthermore, three men are directors of both Alleghany and Goodyear Tire and Rubber.

(6) *Between Kuhn, Loeb and Cleveland.*—The records of the Securities and Exchange Commission indicate that at least since the beginning of 1935, Kuhn, Loeb has been the leading underwriter for the four steel companies in the Cleveland group, namely, Republic, Youngstown Sheet & Tube, Inland, and Wheeling.[59]

(7) *Between Kuhn, Loeb and Du Pont.*—One of the few large companies in which Kuhn, Loeb partners hold directorships is United States Rubber, and in this case two Kuhn, Loeb partners are directors. United States Rubber is controlled by minority ownership by the Du Ponts.

(8) *Between Du Pont and Rockefeller.*—The Du Ponts' General Motors and Rockefeller's Standard Oil of New Jersey own on a half-and-half basis the Ethyl Gasoline Corporation. The latter exercises a virtual police power over the terms and conditions of sale of 85 percent of the gasoline with high octane rating sold in the country.[60] This amounts to about 70 percent of all gasoline sold.

(9) *Between Rockefeller and Boston.*—One of the difficult problems which had to be decided in making up the various interest groups was whether the giant International Paper & Power Co. should be assigned to Boston or Rockefeller. Boston is particularly closely associated with its power subsidiary, New England Power Association, which holds well over half the total assets of International Paper & Power. For example, F. D. Comerford is at one and the same time a director of the First National Bank of Boston, chairman of New England Power Association, and president of Edison Electric Illuminating Co. of Boston. The latter has five directors in common with the First National and/or the Old Colony. On the other hand Chase National Bank now holds 16.6 percent of the voting power in International Paper & Power,[61] a holding exceeded only by that of the Phipps family. Furthermore, Chase and International Paper & Power have two directors in common.

The dilemma created by this situation was solved by assigning International Paper & Power to neither the Boston nor the Rockefeller groups.[62] That it provides a strong link between them, however, is evident.

(10) *Between Boston and Mellon.*—Gas in Boston is provided by Koppers' subsidiary Eastern Gas & Fuel Associates. Halfdan Lee, president of Eastern Gas & Fuel, is a director of First National Bank of Boston. Three prominent members of the Boston group are on the board of trustees of Eastern Gas & Fuel.

(11) *Between Mellon and Kuhn, Loeb.*—Westinghouse Electric & Manufacturing, certainly under Mellon influence and probably under Mellon control, has had long and close relations with Kuhn, Loeb.[63] The late Jerome Hanauer, former Kuhn, Loeb partner, was a director of Westinghouse until his death.

Before leaving the subject of the interrelation of the various groups, it is well to note the role played in particular by the American Telephone & Telegraph Co. The American Telephone & Telegraph Co. covers the greater part of the country with its score or more associated companies. Each of these subsidiaries has a complete corporate structure with a board of directors and banking relations at least partially unconnected with those of the parent company. It has been a deliberate policy of the Bell System to foster relations with the important industrial and financial groups in all the large centers where it does business.[64] The result is that every one of the groups which have been analyzed interlocks in greater or lesser degree with one or more of the Bell System companies, and probably most of the large banks have financial relations with the local Bell company. It is of course difficult to gauge the importance of connections of this sort, but the extent to which they have been developed leads to the belief that they are by no means insignificant. It is probably true that relations like those just described are of more importance and interest insofar as they form a bond between the major groups and apparently independent corporations both large and small. It is obvious, however, that the discussion of the implications of the Bell System and kindred organizations cannot be a part of this study.[65]

The material here presented raises questions to which no answer can here be attempted. What is the significance of the existence of more or less closely integrated interest groups for the pricing process? What are its implications for the relation between economic and political activity? How and to what extent do the views of leaders in the economic sphere make themselves felt in the life of the community?

These questions, and many more, are raised with an urgency proportionate to the degree of concentra-

[59] Also for the two of the other large steel independents, Bethlehem and National.

[60] The facts came to light in an antitrust suit initiated by the Department of Justice early in 1937; *Equity No. E. 84-321, District Court of the U. S., Southern District of New York; U. S. A., petition* v. *Ethyl Gasoline Corporation, Earle C. Webb, and John Coard Taylor, defendants; petition*, filed February 19, 1937.

[61] As of May 1937. S. E. C. File 33-22.

[62] Alternatively, the assets of International Paper & Power might be considered as evenly divided between Chase and Boston, thus raising the asset figures for Boston utilities from $554 to $942 millions. In assigning the other 50 percent of assets, it seems desirable to add them to Chase rather than directly to the Rockefeller total. This raises the Rockefeller bank total to $2,739 millions but adds nothing to utilities.

[63] See above, p. 312.

[64] A similar policy is adopted by other large companies which have subsidiaries scattered over the country. The American Telephone & Telegraph is simply the best-developed case.

[65] Ample raw material for a thorough analysis of this problem exists in the study of the Federal Communications Commission already cited. See particularly the volumes entitled "Outside Contacts of the Bell System" and "Banking Relations of the Bell System."

tion of economic leadership in the hands of a few. The present study will perhaps have helped to demonstrate that they have now attained the status of central issues.

TABLE I — *Companies among the 200 largest nonfinancials and the 50 largest banks which do not fall into the 8 interest groupings* [1]

[Asset figures obtained from Moody's. In millions of dollars]

| | |
|---|---|
| **INDUSTRIALS** | |
| Ford Motor Co | 681. 6 |
| Bethlehem Steel Corporation | 673. 1 |
| Anaconda Copper Mining Co | 581. 5 |
| The Texas Corporation | 473. 8 |
| Shell Union Oil Corporation | 358. 1 |
| Consolidated Oil Corporation | 331. 1 |
| Swift & Co | 321. 4 |
| Union Carbide & Carbon Corporation | 271. 1 |
| The American Tobacco Co | 264. 2 |
| Allied Chemical & Dye Corporation | 252. 5 |
| Sears, Roebuck & Co | 234. 0 |
| American Can Co | 209. 1 |
| Chrysler Corporation | 193. 5 |
| F. W. Woolworth Co | 192. 3 |
| National Dairy Products Corporation | 192. 0 |
| Great Atlantic & Pacific Tea Co. of America | 189. 2 |
| Tide Water Associated Oil Co | 182. 8 |
| National Steel Corporation | 180. 5 |
| Singer Manufacturing Co | 175. 8 |
| Phillips Petroleum Co | 174. 5 |
| American Smelting & Refining Co | 171. 7 |
| Liggett & Myers Tobacco Co | 170. 5 |
| Warner Bros. Pictures, Inc | 168. 5 |
| Eastman Kodak Co | 168. 3 |
| The Pure Oil Co | 157. 2 |
| R. J. Reynolds Tobacco Co | 153. 9 |
| Union Oil Co. of California | 151. 7 |
| The Firestone Tire & Rubber Co | 139. 3 |
| Loew's, Inc | 128. 6 |
| Hearst Consolidated Publications, Inc | 128. 6 |
| The Proctor & Gamble Co | 127. 1 |
| The B. F. Goodrich Co | 124. 0 |
| The Borden Co | 120. 1 |
| Paramount Pictures, Inc | 118. 9 |
| Corn Products Refining Co | 118. 7 |
| S. S. Kresge Co | 118. 5 |
| The American Sugar Refining Co | 117. 7 |
| Sun Oil Co | 107. 1 |
| National Lead Co | 104. 0 |
| Radio Corporation of America | 102. 5 |
| Crown Zellerbach Corporation | 101. 3 |
| General American Transportation Corporation | 96. 3 |
| Crane Co | 95. 2 |
| Continental Can Co., Inc | 94. 6 |
| American Car & Foundry Co | 91. 2 |
| R. H. Macy Co., Inc | 90. 5 |
| International Shoe Co | 83. 2 |
| The Lehigh Coal & Navigation Co | 82. 0 |
| Gimbel Bros., Inc | 79. 9 |
| Deere & Co | 79. 7 |
| Climax Molybdenum Co | 79. 1 |
| Minnesota & Ontario Paper Co | 78. 2 |
| The Cudahy Packing Co | 76. 4 |
| Brown Co | 76. 4 |
| J. C. Penney Co | 74. 4 |
| Allis-Chalmers Manufacturing Co | 73. 2 |
| Columbia Oil & Gasoline Corporation | 71. 8 |
| McKesson & Robbins, Inc. (Md.) | 71. 4 |
| S. H. Kress & Co | 70. 4 |
| American I. G. Chemical Corporation | 69. 3 |
| General Foods Corporation | 67. 9 |
| Total | 10, 531. 4 |
| **PUBLIC UTILITIES** | |
| Associated Gas & Electric Properties | 1, 125. 4 |
| Cities Service Co | 1, 113. 2 |
| The North American Co | 1, 042. 6 |
| International Paper and Power Co | 771. 2 |
| Pacific Gas & Electric Co | 647. 3 |
| Standard Gas & Electric Co | 637. 3 |
| Interborough Rapid Transit Co | 554. 8 |
| Middle West Corporation | 400. 0 |
| American Waterworks & Electric Co | 396. 7 |
| Utilities Power & Light Corporation | 367. 2 |
| Southern California Edison Co., Ltd | 360. 2 |
| The Detroit Edison Co | 327. 2 |
| Midland United Co | 320. 0 |
| Brooklyn-Manhattan Transit Corporation | 300. 4 |
| Duke Power Co | 213. 6 |
| Pacific Lighting Corporation | 194. 3 |
| Federal Water Service Corporation | 176. 7 |
| Consolidated Gas, Electric Light & Power Co. of Baltimore | 160. 1 |
| Central Public Utility Corporation | 151. 6 |
| Lone Star Gas Corporation | 134. 3 |
| Long Island Lighting Co | 127. 6 |
| Hudson & Manhattan Railroad Co | 125. 5 |
| Chicago Railways Co | 112. 0 |
| Boston Elevated Ry. Co | 110. 6 |
| 3d Ave. Ry. Co | 107. 2 |
| Portland Electric Power Co | 95. 0 |
| Community Water Service Co | 84. 5 |
| Jersey Central Power & Light Co | 80. 1 |
| Associated Telephone Utilities Co | 79. 4 |
| Philadelphia Rapid Transit Co | 73. 0 |
| St. Louis Public Service Co | 72. 8 |
| National Fuel Gas Co | 72. 4 |
| The Baltimore Transit Co | 67. 7 |
| Natural Gas Pipeline Co. of America | 67. 3 |
| Total | 10, 669. 2 |
| **RAILROADS** | |
| Baltimore & Ohio R. R. Co | 1, 118. 3 |
| Atlantic Coast Line R. R. Co | 786. 5 |
| Reading Co | 495. 3 |
| Chicago, Rock Island & Pacific Ry. Co | 481. 2 |
| St. Louis-San Francisco Ry. Co | 417. 9 |
| Seaboard Air Line Ry. Co | 272. 1 |
| Western Maryland Ry. Co | 168. 1 |
| Chicago Great Western R. R. Co | 141. 3 |
| Kansas City Southern Ry. Co | 131. 3 |
| Florida East Coast Ry. Co | 123. 2 |
| Chicago Union Station Co | 91. 4 |
| Chicago & Western Indiana R. R. Co | 88. 9 |
| Terminal Railroad Association of St. Louis | 77. 0 |
| Minneapolis & St. Louis R. R. Co | 72. 0 |
| Total | 4, 464. 5 |

[1] These companies and their asset figures are taken from the list of 200 largest nonfinancial corporations in Appendix 10, plus the 50 largest banks

BANKS

| | |
|---|---|
| National City Bank | 1,880.7 |
| Bank of America National Trust and Savings Association | 1,277.4 |
| Central Hanover Bank & Trust Co | 914.8 |
| Irving Trust Co | 720.0 |
| Manufacturers Trust Co | 673.0 |
| Chemical Bank & Trust Co | 625.2 |
| Security First National Bank | 591.0 |
| Philadelphia National Bank | 452.8 |
| Corn Exchange Bank Trust Co | 317.4 |
| American Trust Co | 271.8 |
| Wells Fargo Bank & Union Trust Co | 248.6 |
| First National Bank (St. Louis) | 235.5 |
| Pennsylvania Co., for Insurance, etc | 235.3 |
| Anglo-California National Bank | 214.3 |
| Bank of New York & Trust Co | 204.5 |
| National Shawmut Bank | 203.5 |
| First Wisconsin National Bank | 199.4 |
| First National Bank (Baltimore) | 182.4 |
| Marine Trust Co | 176.1 |
| San Francisco Bank | 170.6 |
| Commerce Trust Co | 165.6 |
| Mercantile-Commercial Bank & Trust Co | 164.2 |
| Public National Bank & Trust Co | 156.3 |
| Fidelity Union Trust Co | 150.6 |
| First National Bank & Trust Co. (Minneapolis) | 149.8 |
| Central National Bank of Cleveland | 147.0 |
| First National Bank (St. Paul) | 146.9 |
| Crocker-First National Bank | 142.3 |
| National City Bank of Cleveland | 137.6 |
| Seattle First National Bank | 135.8 |
| Bank of California, L. A | 131.2 |
| Industrial Trust Co. (Providence) | 130.0 |
| Fidelity-Philadelphia Trust Co | 129.9 |
| Total | 11,661.3 |

NOTE.—The assets of the companies on the list of the 200 largest nonfinancials and the 50 largest banks total $98,108 millions. Of these companies, those not included in the 8 interest groupings control assets of $37,064 millions, or 37.8 percent.

TABLE 11 *Summary of assets of companies connected with the various interest groupings*

| Interest grouping | Assets (millions of dollars) | | | | |
|---|---|---|---|---|---|
| | Industrial | Utilities | Railroads | Banks | Total |
| Morgan-First National | 3,920 | 12,191 | 9,678 | 4,421 | 30,210 |
| Rockefeller | 1,262 | | | 2,351 | 6,613 |
| Kuhn, Loeb | | 342 | 9,963 | 548 | 10,853 |
| Mellon | 1,648 | 859 | 153 | 672 | 3,332 |
| Chicago | 858 | 814 | | 2,595 | 1,268 |
| DuPont | 2,232 | | | 396 | 2,628 |
| Cleveland | 1,066 | | | 338 | 1,404 |
| Boston | 425 | 554 | | 740 | 1,719 |
| Total | 14,411 | 14,759 | 19,794 | 12,061 | 61,025 |

NOTE.—The assets of the companies of the 250 list in which these 8 groups have a significant interest, $60,958 millions, are 62.0 percent of the total assets of the 200 largest nonfinancial companies plus the assets of the 50 largest banks ($98,350 millions).

# APPENDIX 14.—THE ROLE OF LABOR ORGANIZATION[1]

## Introduction

The rise of American trade-union membership to unprecedented heights in 1937 has made the influence of workers, as a group, on the determination of policies in industry potentially very much greater than it has been before in this country. Policies in regard to the use of national resources in production will increasingly reflect the result of joint consideration by labor and management of many details in the operation of industry. For an understanding of the operation of the American economy, it is essential, therefore, to consider the nature and extent of labor organization, and the methods through which organized workers participate in the determination of economic policies.

Labor organization, for the purpose of this survey, may be defined as any association of wage earners concerned with the industrial interests of its members. The trade union, traditionally defined as a continuing association of wage earners for the purpose of maintaining or improving the conditions of their working lives, is the predominant type of labor organization. The company union, together with its successor, the "independent union", is included, because among its purposes are attention to working conditions and protection of individual worker's interests, although its scope is narrower than that of the trade union. The fact that some company unions have been employer-dominated and for the primary purpose of preventing trade-union organization does not exclude the entire group from the category of labor organization.

The trade union movement in the United States throughout its history has reflected the character of the economic environment. The first unions, local groups of skilled craftsmen, were organized in the 1790's and early 1800's when the market had broadened enough to introduce merchant-middlemen between consumers and the producer group of craftsmen and their employers, with the resultant competitive pressure on prices and wages. As time went on, the widening of the market brought with it the development of the factory system, competition on a nation-wide basis, and larger scale operations under corporate control. Trade unions reflected these changes, in the development first of local trades unions, through which various craft unions cooperated on local issues; then the establishment of national unions of the various crafts, especially after the Civil War; and finally the federation of the national unions in the American Federation of Labor in 1886.

Labor organization throughout the century had its periods of resurgence and decline, of experimentation with political action and with utopian panaceas. The Knights of Labor, which rose to its peak in 1886 and rapidly declined thereafter, attempted organization to include all workers, and had broad social and political as well as industrial aims. By the end of the century, however, the American Federation of Labor was dominant among American labor organizations. Its policies of business unionism, hard-headed attention to the wage and hour problems of its members, and organization of the more skilled workers in the type of unions which could deal effectively with their problems, were well established, and resulted in a stability and strength unknown before.

The World War, with its demand for production, scarcity of labor, rising prices, and a generally high level of profits, put organized labor in a strategic position. Membership rose to over five million by 1920, and temporarily included large groups of the less skilled workers who had been unorganized before, especially in the metals, machinery, shipbuilding, transportation, and clothing industries. The gains proved unstable, however, and through most of the decade of the 1920's trade union membership stood again only a little above its pre-war level.[2]

A striking fact of the American labor movement is that it embraced so small a proportion of the workers before 1935. The best estimates[3] indicate that the percentage of all employees organized rose from 8.6 in 1910 to 17.5 in 1920, and fell to 9.3 in 1930. For all nonagricultural employees the percentage rose from 9.9 in 1910 to 19.4 in 1920, and fell to 10.2 in 1930. In the manufacturing field 12.7 percent of the wage-earners were organized in 1923, 10.9 in 1929, and 16.2 in 1933, while in 1935 the percentage had increased to 17.6.

The upturn from the depression in 1933 opened a new chapter in trade-union history. The expansion of union membership which began in that year, and by 1937 had reached perhaps 7,000,000 members, appeared to be a response to long-run underlying factors as well as to more immediate influences. The increase in business

[1] Appendix 14 was prepared by Emily C. Brown, assisted by Jean M. Massel.

[2] Leo Wolman. *Ebb and Flow in Trade Unionism*, New York, 1936, pp. 16, 28.

[3] *Ibid.*, pp. 116, 227; Wolman, Union Membership in Great Britain and the United States, *National Bureau of Economic Research Bulletin 68*, December 27, 1937, p. 11.

activity, rising employment, and rising prices provided a stimulus and an increasing opportunity for trade-union activity. Federal legislation encouraging and protecting labor organization, especially the National Industrial Recovery Act and the National Labor Relations Act, were influential in the movement. The widespread character of the movement, however, in areas hitherto entirely unorganized and among unskilled and semiskilled workers, seemed to reflect a new attitude of American workers—a demand for organization through which all workers, skilled and unskilled, could participate in the determination of the industrial policies directly affecting them. The insecurities met during the long depression and accumulated resentments against particular industrial policies contributed to the vigor with which this demand was pushed.

The consequent establishment of trade unionism on a wider scale than ever before, functioning under trade agreements in industries hitherto without experience in this sort of joint control, makes necessary a consideration of present-day trade unionism and its place in the American economy.

## Current Labor Organizations in the United States

An attempt to describe the current structure of American labor organizations is confronted by grave difficulties. At a time of rapid development and change, the problem of securing the facts is serious, while facts once obtained rapidly become out of date. Nevertheless, the general outlines of the picture are of more than momentary significance and may be drawn with some definiteness. The details are presented only as the best information available as of September–October 1937.

A number of differentiations must be made in describing American labor organization at this time. The most generally recognized is that between the American Federation of Labor and the Committee for Industrial Organization. A second, not entirely coincident with the first, is that between craft and industrial unionism. In each of these categories are the local, the international union, and the federation. Finally, there are the "unaffiliated" unions, the company unions, and the so-called independent unions.

### Craft and Industrial Unionism

A craft union is a union of workers who perform a certain type of work, with special skills, using tools characteristic of this craft or trade. The jurisdiction is over a rather narrow range of jobs, although the members may work in a considerable number of industries, producing a variety of products. Pure craft unions are relatively rare, most of the so-called craft unions covering several related types of work. Examples of pure craft unions are those of pattern-makers, window-glass cutters, and locomotive engineers. The unions of carpenters, machinists, printing pressmen, and teamsters are examples of "craft unions" having a jurisdiction broader than single crafts.

The industrial union, on the other hand, has a jurisdiction covering all the workers in an industry, whatever their occupation. The basis of this jurisdiction is the product. Whether the union includes all workers, even office workers and teamsters, however, differs from case to case. Examples of industrial unions are the unions of the men's and women's clothing workers, the mine workers, tobacco workers, and automobile workers.

The lines between craft and industrial unionism are blurred by a number of developments. In certain fields, craft unions are organizing on an industrial basis. The American Federation of Labor awarded jurisdiction over the radio and electrical manufacturing industry to the Brotherhood of Electrical Workers; over the lumber industry to the Carpenters and Joiners; and over the manufacture of aircraft to the International Association of Machinists. The machinists frequently organize on a semi-industrial basis, making agreements to cover all workers in auto repair shops and in many machine shops, and in locomotive building covering all workers except such other skilled groups as pattern-makers and molders. Such tendencies to expand toward industrial organization can be found among other craft unions.

The development of cooperative action by craft unions is another move toward a type of industrial action, while maintaining actual organization on a craft basis. The Pacific Coast Maritime Federation, local building trades councils, and metal trades councils, railroad shop crafts, and the entire group of standard railroad unions, all are examples of arrangements for joint action by craft unions, although the crafts maintain their separate identity.

From the standpoint of industrial structure it is clear that unions cannot be classed simply as craft or industrial. Rather there is a wide range of forms, from the pure craft union which makes craft agreements, through various joint-craft and semi-industrial forms, to the union which organizes and bargains collectively for all workers in the industry as a unit. Experimentation with all these forms is active at the present time, and different types appear to be proving themselves suited to different conditions.

### Local and International Unions and the Federation

The local union is the basic unit of American trade unionism. The great majority of these local unions are members of a national or international union of the same craft or industry. During the years of rapid organization following the National Recovery Admin-

istration the federal local also has been of importance—a local union, directly affiliated with the American Federation of Labor and usually of industrial form, in an industry or group of industries in which there was not at the time a national union. Similar local unions, directly affiliated with the Committee for Industrial Organization, made their appearance more recently.

The international unions, made up of the local units, take their title from the fact that most of them include Canada within their jurisdiction, and a few Mexico, Cuba, and other areas. The international union is the seat of power in the American labor movement. The degree of control over local unions varies, but always is considerable. Autonomy is jealously maintained as against the power of the federation to which the international belongs, although it is the federation which lays down the lines of jurisdiction. On all matters within its jurisdiction, however, the international has authority. It is the international, or its local unions, which engages in collective bargaining, makes agreements, pays strike benefits, and in general carries on the industrial functions of a trade union.

The federation is formed by the affiliation of international or local unions. It sponsors State and city federations or councils of its affiliated unions. Its chief functions are the establishing of jurisdictional lines, the encouragement and support of organizing campaigns, the formulation of general policies for trade union action, and the promotion of legislation and governmental action favorable to the interests of labor. The American Federation of Labor has been for many years the central organization with which the great majority of organized workers are affiliated. The Committee for Industrial Organization functioned from 1936 to 1938 as a loose federation, and in 1938 established itself as a formal organization under a constitution, taking the name: Congress of Industrial Organizations.

#### The American Federation of Labor

The American Federation of Labor had its beginning in 1881 in the Federation of Organized Trades and Labor Unions, and in 1886 was formally organized under its present title. From the beginning it has been a federation of autonomous unions. In 1937 it included 100 national and international unions with their 28,642 local unions, and 1406 local trade and Federal unions directly affiliated with the Federation. The members of these locals were affiliated also through 738 city federations or "central labor unions" and 49 State federations.[4] There were four departments also in the Federation: the Building Trades Department, Metal Trades Department, Railway Department, and a Union Label Trades Department.

[4] American Federation of Labor *Report of Proceedings of Fifty-seventh Annual Convention*, 1937, p. 76.

The American Federation of Labor, throughout its history, has included craft, industrial, and intermediate forms of unions, but the craft type has been predominant. A satisfactory estimate of proportionate membership is difficult to make, because of the uncertainties as to the type of many unions. However, it is clear that the industrial form came to have a larger share than previously during the upswing of union membership after 1933, because of the disproportionate increases in the mining, clothing, and later in the heavy industries.[5]

The American Federation of Labor has not, as a matter of official policy, preferred either the craft or the industrial form under all circumstances. It has held, however, that jurisdiction rights granted to a union by the American Federation of Labor must not be infringed upon by another union. In practice there have been numerous conflicts over jurisdiction between craft and industrial unions within the Federation. Problems of this sort came to the fore when organization developed on an industrial basis in industries which had been largely unorganized, but in parts of which various craft unions held jurisdiction according to their charters, as in the automobile, rubber, and electrical manufacturing industries.

#### The Committee for Industrial Organization

Before 1935 American trade unionism, with its predominatingly craft character, had not organized the heavy manufacturing industries. In 1934 about two-thirds of all American trade-union members were concentrated in the mining, quarrying and oil, building, transportation and communication, clothing, and paper and printing industries.[6] In manufacturing industries other than clothing and paper and printing, there were only 14 percent of all trade union members.[7] Organization in the heavy industries—automobiles, steel, rubber, and others—was very limited. In order to cover the important gaps in labor organization, the Committee for Industrial Organization was established in November 1935. It was initiated by the presidents of eight international unions affiliated with the American Federation of Labor, under the chairmanship of John L. Lewis of the United Mine Workers. Its purpose was stated in its first official publication:

> It has been formed for the purpose of encouraging and promoting the organization of the unorganized workers in mass production and other industries upon an industrial basis. Its aim is to foster recognition and acceptance of collective bargain-

[5] Dr. Wolman estimated that for all American trade unions the approximate percentage of craft unions in all trade union membership was as follows: 1914, 75 percent; 1929, 83 percent; 1933, 73 percent; 1934, 67 percent. (Wolman, *Ebb and Flow in Trade Unionism*, p. 92.) These figures were obtained by deducting from total membership the membership of certain clearly industrial unions, in mining, clothing, shoe, textile, brewing, ship-building, and electrical industries. They probably overestimate the craft percentage.

[6] Wolman, *Ebb and Flow in Trade Unionism*, p. 87

[7] *Ibid.*, p. 91.

ing in such basic industries; to counsel and advise unorganized and newly organized groups of workers; to bring them under the banner and in affiliation with the American Federation of Labor as industrial organizations.[8]

This action followed upon the refusal of the American Federation of Labor, at its convention in October 1935, to grant unrestricted industrial charters to the unions of automobile, rubber, and other mass-production workers, and its insistence upon protecting the jurisdictional rights of existing craft unions. The test vote on this issue had been 18,024 to 10,933.[9]

This is not the place for a history of the controversy or an appraisal of the merits of the issues involved. The Committee for Industrial Organization proceeded actively to assist organization on an industrial basis among the automobile, rubber, electrical, steel, and other workers. The Executive Council of the American Federation of Labor on August 5, 1936, preferred charges of dualism and violation of their charters against the 10 American Federation of Labor unions which were then members, and ordered them to withdraw from the Committee. Upon their failure to accede, they were suspended as of September 5, 1936. The convention in November 1936, in the enforced absence of the Committee for Industrial Organization unions, upheld the action of the Executive Council.[10]

In October 1937 the Committee for Industrial Organization was functioning as a loose federation of 30 international unions, while the presidents of 2 additional American Federation of Labor unions, the International Typographical Union and the United Hatters, Cap and Millinery Workers, were members of the Committee as individuals. There were also 605 local industrial unions directly chartered. The local unions, both those belonging to the international unions and those directly affiliated, were associated also in the 82 industrial union councils, in cities, counties and States.[11] About half of the constituent unions were former American Federation of Labor members, the others newly organized or formerly independent unions, with a mixture of former American Federation of Labor units. Although the Committee for Industrial Organization did not adopt a formal constitution until November 1938, it was actively performing the functions of a trade union federation.

The Committee for Industrial Organization unions, on the whole, were industrial in character. The American Federation of Labor organizations, as shown earlier, included craft, multiple craft, and industrial forms. In 1937 jurisdictional lines were less rigid than at any earlier time, as a result of the rapid extension of union organization, the competition between the American Federation of Labor and the Committee for Industrial Organization in organizing new areas, and the resulting experimentation with new forms of organization by both groups. The jurisdictional question was being worked out in the field, and in some cases the formal jurisdictional rights, as stated in union charters, were not in accord with the actual situation.

#### Unaffiliated Unions

In addition to the American Federation of Labor and the Committee for Industrial Organization, which included the greater part of the organized workers, there were in September 1937 a number of independent or unaffiliated international unions. The largest groups were among railroad workers, including the four operating Brotherhoods and other organizations, which had never affiliated with the American Federation of Labor but cooperated fully with the American Federation of Labor unions. Among other groups the situation was in flux, but there were at that time unaffiliated unions of Government employees, shoe workers, maritime workers, and others.

#### Company Unions

The company union has been defined as "an organization confined to workers of a particular company or plant, which has for its purpose the consideration of conditions of employment."[12] It is characterized both by its limitation to the employees of one company,[13] and by the absence of contact or affiliation with the trade union movement. In the great majority of cases the initiative in establishing the organization came from the employer. Originating in "employee representation plans" established early in the century by several companies, the movement received a marked impetus during the war from the efforts of the National War Labor Board and other Federal labor boards to ensure prompt settlement of disputes in war industries. Interest in these plans continued during the post-war decade, as part of the personnel policy of many large corporations, and was one factor in the failure of trade unionism to maintain its post-war peak. The National Industrial Conference Board reported 313 employee representation plans in 1932, covering 1,263,194 employees.[14]

Under the National Industrial Recovery Act the company union movement had a renewal of activity, in

[8] American Federation of Labor. *Report of Proceedings of Fifty-sixth Convention*, 1936, p. 69. See also Committee for Industrial Organization, *The Case for Industrial Organization*, Washington, D. C., March 1936.

[9] American Federation of Labor, *loc. cit.*, pp. 65–68.

[10] *Ibid.*, pp. 80–83, 553.

[11] Committee for Industrial Organization, *Report of Director John Brophy to the Meeting of the Committee for Industrial Organization in Atlantic City, October 11, 1937*. Mimeographed, pp. 12–13; also *CIO, What It Is And How It Came To Be*, October 1937, p. 39.

[12] United States Bureau of Labor Statistics, *The Characteristics of Company Unions, 1935*. Bulletin No. 634, p. 3.

[13] In a very few cases these organizations cover a group of companies; for example, the Loyal Legion of Loggers and Lumbermen, or the American Guild of the Printing Industry, in Baltimore.

[14] National Industrial Conference Board. *Collective Bargaining Through Employee Representation*, New York, 1933, p. 16.

competition with the trade union organizing campaign. The number of company unions increased markedly. In 1935, a study by the United States Bureau of Labor Statistics found 592 company unions among 14,725 establishments in manufacturing, mining, and selected service, trade, and public-utility industries. The establishments having company unions employed 528,533 or 27.3 percent of all the workers employed in the plants surveyed.[15] The mass production industries, especially iron and steel and their products, machinery of all kinds, automobiles and other transportation equipment, rayon, petroleum refining, rubber goods, and slaughtering and meat packing, were the sections where company unions were most extensive in 1935. In these industries, the proportion of workers in plants with company unions ranged from about one-half to over 80 percent of the total.[16]

The changes occurring by September 1937 had greatly altered this situation. The success of trade union organizing campaigns, as indicated above, had established strong trade unions, functioning under trade agreements in the manufacture of steel, automobiles, radios and electrical machinery, rayon, and rubber goods, and in petroleum refining, as well as in other areas. Company unions continued to function at points within these as well as other fields, but they were much less extensive than two years earlier.

Valuable data on the nature of company unions are given in the study of the Bureau of Labor Statistics, which analyzes questionnaire reports on 592 company unions, and an additional more detailed field study of 126 cases. The Bureau estimated that more than half of the company unions studied were agencies for discussion only, or benefit and welfare associations, rather than organizations to perform the functions usually included under the term collective bargaining. About a third more were undertaking only a few of the activities in which trade unions normally engage, such as settling grievances, while broad questions of wages and hours, if discussed at all, "had not been submitted to a process of negotiation and bargaining. * * * Where these company unions have been successful in the limited area of grievance adjustment, a liberal, intelligent attitude on the part of management has been an important factor. With careful cooperation by management about half of the company unions in this group have become effective avenues for the adjustment of individual grievances." A final 15 percent were found to be "seriously attempting to function in those fields commonly ascribed to collective bargaining. They represented the interests of the workers with a vigor not entirely attributable to management encouragement."[17] But even the company unions which more or less approximated the trade union in form, with membership, dues, and written agreements, continued in most cases to be limited to a single company, and to hold themselves aloof from the trade union movement.[18]

#### Independent Unions

A development since 1935, and especially in 1937 after the Supreme Court upheld the constitutionality of the National Labor Relations Act, has been the appearance of labor organizations calling themselves independent unions. These differ from the unaffiliated unions such as the railroad brotherhoods in that typically they are limited to the employees of single companies. In compliance with the requirements of the National Labor Relations Act, they claim to be completely independent of management. They are independent also of connection with the trade union movement. "Independent company union" would perhaps be an appropriate name. In large numbers of cases they are the successors of company unions, and represent a continuation of the trend toward independence already apparent in 1935.

Information on these organizations is scanty.[19] They are often incorporated. They provide for financing by dues from their membership. Some of them have made written agreements. Some have won elections conducted by the National Labor Relations Board for the selection of collective bargaining representatives.[20] Others have been declared by the National Labor Relations Board to be company dominated and therefore illegal.[21] Attempts to form national federations of these independent unions have been made, but little information is available on their operations.

### Trade Union Membership in the United States in 1937

Any estimate of the membership of trade unions in the United States in the fall of 1937 is subject to serious errors. Reports are available from both the major groups of unions, but there are gaps in the data, and question as to the comparability and accuracy of the figures available.

A discussion of the difficulties involved in attempting to estimate trade union membership is pertinent.[22] For

[15] *Characteristics of Company Unions, 1935*, pp. 31-33. Returns from 14,725 firms were received from a questionnaire sent to approximately 43,000 firms. In 96 of the plants, including 7.4 percent of the total workers covered, trade unions also existed.

[16] *Ibid.*, pp. 42-45.

[17] *Ibid*, pp. 204-5.

[18] *Ibid*, p. 204.

[19] See National Labor Relations Board, Research Memorandum No. 1, March 14, 1938, *Statistical Analysis of 85 "Independent" Unions and Readapted Company Unions*, mimeographed. National Association of Manufacturers, *Labor Relations Bulletin*, July 23, 1937, pp. 3, 16-27; A. S. Regula, Employee representation and independent employee associations, American Management Association, *Personnel Series* No. 34, 1938; David J. Saposs and Elizabeth T. Bliss, *Anti-Labor Activities in the United States*, League for Industrial Democracy, June 1938, pp. 8-17.

[20] From October 1935 through December 1937, company unions or local independent unions won 103 or 48.6 percent of the 212 elections in which they participated, 99 of these victories occurring in 1937. Emily Marks and Mary Bartlett, "Employee elections conducted by the National Labor Relations Board," *Monthly Labor Review*, July 1938, pp. 33-34.

[21] See list of 55 such cases in Saposs and Bliss, *loc. cit.*, pp. 32-33.

[22] For a full discussion, see Wolman, *Ebb and Flow in Trade Unionism*, ch. 1 and *National Bureau of Economic Research Bulletin 68*, pp. 3-5.

the American Federation of Labor, the source of membership information is the report of voting strength of the international unions in the annual report of the Executive Council. This voting strength is based upon the monthly per capita tax paid by the affiliated unions to the Federation throughout the preceding year. The accuracy of the resulting figures differs according to the practice of the union concerned. As Dr. Wolman points out, the figures underestimate actual strength when unemployed members, temporarily unable to pay dues, are not counted or paid on. On the other hand, some unions either to bolster their prestige or to maintain their vote in the American Federation of Labor, report and pay on a larger number than are actually paid up within the union. The figures reported annually by the American Federation of Labor are therefore actual paid-up membership so far as the Federation itself is concerned, although not necessarily the actual numbers who are paying dues to the international unions.

For the Committee for Industrial Organization the problem is even more difficult. Since it was not yet established on a formal basis with a constitution and annual reports, its current statements on membership necessarily were somewhat informal. Paid up membership could be reported for its well-established unions. However, for some of the unions in process of organization, the evidence of their strength was not the number actually paying dues but the number who had signed pledge cards or in other ways indicated support. Moreover, the numbers of either dues-paying or informally affiliated members change so rapidly that no one figure is of great significance. In a period of rapid organization membership figures quoted are inevitably an estimate including actually paid-up members, unemployed members exonerated from dues, signed-up but not yet paid-up members, and in some cases estimates of organizers as to numbers owing allegiance to the union. It is impossible to estimate the extent to which the membership reported in October 1937 was dues-paying.

For the American Federation of Labor, total paid membership in August 1937 was reported as 3,271,726. Membership the previous August had been 3,586,567, including the Committee for Industrial Organization unions.[23] Thus an increase of nearly 600,000 members was shown to replace the more than 900,000 of the suspended Committee for Industrial Organization unions. Among the groups which had made substantial gains were the machinists, the electrical workers, the teamsters, and the directly affiliated local unions in a wide variety of industries. The building trades were the largest groups in the American Federation of Labor, and transportation and the metal trades the next.

For the Committee for Industrial Organization, it was announced on September 2, 1937, that membership amounted to 3,718,000. Of this number, 2,765,000 were included in 11 unions in the coal, auto, steel, garment, textile, lumber, rubber, electrical manufacturing, power and transport industries. Local unions directly chartered had a membership of some 200,000. The remaining 750,000 were in other international unions.[24]

The membership, or the number covered by agreements, as reported for some of the largest unions of the Committee for Industrial Organization, is given in the table below.

TABLE I. *Membership or numbers covered by agreements, in largest unions of Committee for Industrial Organization, October 1937*

| Union | Membership | Number covered by agreements |
|---|---|---|
| United Mine Workers | 600,000 | ..... |
| United Automobile Workers | 375,000 | ..... |
| Steel Workers Organizing Committee | ..... | 500,000 |
| Textile Workers Organizing Committee | 450,000 | 270,000 |
| International Ladies' Garment Workers Union | 250,000 | ..... |
| Amalgamated Clothing Workers | 225,000 | ..... |
| United Electrical, Radio, and Machine Workers | 137,000 | ..... |
| Transport Workers Union | 80,000 | ..... |
| United Rubber Workers | 75,000 | ..... |
| Petroleum Workers Organizing Committee | ... | 65,000 |

Compiled from: Committee for Industrial Organization, *C. I. O., What it is and How It Came To Be*, October 1937, pp. 26–40; *Report of Director John Brophy to the Meeting of the Committee for Industrial Organization, in Atlantic City, Oct. 11, 1937*, pp. 3–11. The figure given for Textile Workers membership is of pledges signed.

For the trade unions which were not affiliated with either the American Federation of Labor or the Committee for Industrial Organization, up-to-date membership figures were lacking. The largest groups were in the transportation and communications field, and in public service, where there were in 1935 estimated memberships of 299,200 and 151,200.[25] Some of the unions which in 1935 had been independent had by 1937 affiliated with one or the other of the chief groups. The total membership of the unaffiliated unions in 1937 has been estimated at not more than 550,000.[26] For company unions and the more recently organized independent unions (or independent company unions) no membership figures were available.

Totaling these unsatisfactory membership figures, a very rough estimate is obtained of the membership claimed for all trade unions in the United States in the autumn of 1937:

[23] American Federation of Labor, Report of *Proceedings of the Fifty-sixth Annual Convention, 1936*, p 41; *Fifty-seventh Annual Convention, 1937*, p. 76.

[24] Radio address of John L. Lewis *New York Times*, September 4, 1937.

[25] Wolman: *Ebb and Flow in Trade Unionism*, p. 238.

[26] Wolman, *National Bureau of Economics Research Bulletin 68*, p. 5.

| | |
|---|---|
| American Federation of Labor | 3,271,000 |
| Committee for Industrial Organization | 3,718,000 |
| Unaffiliated trade unions | 550,000 |
| Total | 7,539,000 |

This figure of 7,539,000 for the fall of 1937 is undoubtedly higher than actual paid-up membership. There is no reason to doubt, however, that actual membership was substantially above the previous high point estimated at 5,047,800 in 1920.[27]

The fact of increased trade union organization and the resultant increased participation of labor in the determination of industrial policies is indicated by several other types of evidence. The extent to which workers in different industries were covered by trade union agreements in July 1938 has been roughly estimated by the United States Bureau of Labor Statistics.[28] Among the large industries almost entirely covered by such agreements were men's and women's clothing, coal mining, newspaper printing and publishing, and railroad train and yard services. A large proportion, estimated at more than half of the employees, were covered by agreements in the automobile, book, magazine, and job printing, building and construction, electrical equipment, iron and steel, machinery, and rubber industries, and railroad shops, maintenance and clerical service. Substantial proportions were covered in other industries. Union strength was thus uneven. There were considerable areas in which there was little participation, while in others union collective bargaining was widespread and well-established.

The results of elections conducted by the National Labor Relations Board and its predecessors give another indication of trade union strength, in the numerous and widely distributed cases where disputes over the choice of employees' representatives for collective bargaining were settled by this means. As shown in the accompanying table II, trade unions won approximately three-fourths of the elections under the National Labor Board in 1933–34, and again under the present National Labor Relations Board from October 1935 through December 1937, while in the smaller number conducted by the first National Labor Relations Board in 1934–35, they won 58.2 percent. Company unions won 23.1 percent in 1933–34, and increased their percentage to 29.2 in the next year, while from 1935 through 1937 company unions and local independent unions won only 10.7 percent of all elections conducted.

[27] Wolman, *Ebb and Flow in Trade Unionism*, p. 16. For 1938 the American Federation of Labor reported its August paid membership as 3,623,087. American Federation of Labor, *Report of Executive Council to Fifty-eighth Annual Convention, 1938*, p. 9. The Committee for Industrial Organization reported its membership in October 1938 as 4,037,877. *Report of Chairman John L. Lewis to the First Constitutional Convention of the C I O*, Pittsburgh, Pa., November 14, 1938, p. 10.

[28] See Ch. VII, pp. 118, 119.

TABLE II.—*Results of elections conducted by the National Labor Relations Board, 1933–37*

| Date | Number of elections | Number of valid votes | Percentage of elections won by— | | |
|---|---|---|---|---|---|
| | | | Trade unions | Company unions or local independents | No organization |
| August 1933–July 1934 [1] | 546 | 103,714 | 74.7 | 23.1 | 2.2 |
| July 1934–June 1935 [2] | 154 | 45,287 | 58.2 | 29.2 | 12.6 |
| October 1935–December 1937 [3] | 966 | 402,300 | 74.8 | 10.7 | 14.5 |

[1] Emily Clark Brown, Selection of employees' representatives, *Monthly Labor Review*, January 1935, pp. 1–18.
[2] George Shaw Wheeler, Employee elections conducted by the National Labor Relations Board to June 16, 1935. *Monthly Labor Review*, October 1935, pp. 956–7.
[3] Emily Marks and Mary Bartlett, Employee elections conducted by the National Labor Relations Board, *Monthly Labor Review*, July 1938, pp. 31–38.

That conflict has attended this trend toward increased union membership and increased establishment of collective bargaining on a trade union basis is shown by the statistics of strikes, and the reports of the National Labor Relations Board on its cases. The number of strikes increased sharply from 1933 on reaching its peak in 1937, as shown in table III. It is significant, however, that a greatly increased proportion of all strikes had as their major issue questions of union recognition or other matters related to union organization. Such strikes in 1937 reached the peak of 57.8 of the total.

TABLE III.—*Strikes in the United States, 1927–37*

| Year | Number of strikes | Number of workers involved | Percent of strikes in which union organization was major issue |
|---|---|---|---|
| 1927 | 707 | 329,939 | 36.0 |
| 1928 | 604 | 314,210 | 36.5 |
| 1929 | 921 | 288,572 | 41.3 |
| 1930 | 637 | 182,975 | 31.8 |
| 1931 | 810 | 341,817 | 27.8 |
| 1932 | 841 | 324,210 | 19.0 |
| 1933 | 1,695 | 1,168,272 | 31.9 |
| 1934 | 1,856 | 1,466,695 | 45.9 |
| 1935 | 2,014 | 1,117,213 | 47.2 |
| 1936 | 2,172 | 788,648 | 50.2 |
| 1937 | 4,740 | 1,860,621 | 57.8 |

U. S. Bureau of Labor Statistics, Bulletin No. 651, *Strikes in the United States, 1880–1936*, pp. 21, 62. *Monthly Labor Review*, May 1938, pp. 1188, 1200.

The statistics thus suggest that failure to accept trade union collective bargaining was responsible for a very substantial part of the strikes during this period of rapid transition. On the other hand, the National Labor Relations Board reports that of its cases on charges of unfair labor practices and issues over representation, a large proportion of those finally disposed of were closed by agreement of the workers and employers. For the entire period from October 1935 to October 1, 1938, of 13,472 cases closed, 7,174 or 53 percent, were closed by agreement of both parties.[29]

[29] National Labor Relations Board, *News Release*, R-1260, October 29, 1938.

## The Nature of Trade Union Participation in Industrial Management

### The Collective Agreement

The collective agreement is the immediate goal of trade unionism, although trade unions, however strong, have found this instrument inadequate in some respects for their purposes and therefore have turned to governmental action to deal with some of their problems. When labor organization attains such strength that it can influence economic policies in any industry, it tends to record the amount and kinds of its participation in industrial management in a collective agreement entered into by the union and representatives of the management. In those parts of industry in which trade unions have been established in the past, collective agreements have been extensive. With the recent expansion of unionism, collective agreements have appeared in many important industrial fields hitherto untouched by such instruments.[30] Under these circumstances it is desirable to consider the nature of these agreements and their indication of the extent and type of participation by workers in the determination of industrial policy.

A collective agreement, or trade agreement, is a document which results from the process of collective bargaining or negotiation between representatives of workers and of their employer or employers, over the conditions of their employment. These agreements range from very brief and simple statements of wages, hours, and other conditions to highly developed and elaborate regulation of many details of industrial relationships. Their essence is, however, their statement in writing of the details of an agreement between employees collectively and their employer or employers, on certain points as to the conditions of employment.

The collective agreement reflects accordingly the industrial purposes of the labor organization which negotiates it. These purposes, varying in detail among the organizations, may nevertheless be summed up under four points: First, establishment of uniform standards in labor conditions, to protect workers as a group from the undermining competition of individual workers and wage-cutting or price-cutting employers; second, positive improvements in wages, hours, and working conditions; third, the protection of the job, and the establishment of a measure of security for individual workers; fourth, the establishment of means whereby workers can influence the determination of industrial policies which directly affect them. All of these purposes are to be seen throughout the history of trade unionism. In some of the newer trade unions, now on the upswing, the third and fourth appear of especial importance, since standards of wages and hours in these industries were already relatively good, and not the greatest sources of dissatisfaction. The influence of the depression on job insecurity is clearly seen in many of the newer agreements. The demand for recognition and a voice in industry, clear in all agreements, is a product both of recent trends in governmental policy, notably the National Industrial Recovery Act and the National Labor Relations Act, and of the trend, in a country which prizes its political democracy, whereby workers come to demand some measure of democracy in the determination of the industrial policies which affect them.

Collective agreements are possible only after labor has organized, has been recognized by the employer for purposes of negotiation on matters of common interest, and has negotiated and reached agreement on these questions. Strikes, picketing, and boycotts are methods used by labor in the preliminary stage of organizing and securing recognition, just as lockouts, black lists, labor espionage, hiring of strike breakers, and securing of injunctions are methods used by employers who are unready to recognize unions and bargain with them. Labor conflicts occur also in the breakdown of negotiations, but the most bitter strikes are those which involve the right of the union to exist and function. Of the strikes ending in 1937, there were 57.8 percent, affecting 59.8 percent of the workers involved in strikes, which had as major issues questions of union recognition, discrimination, or other union organization matters.[31] Since the concern here, however, is not the problem of attaining recognition and the collective agreement, but rather the nature of the resulting labor participation in determination of policy in industry, the problem of labor conflicts will not be further discussed.

Collective agreements can be classified according to the geographic area and the industrial area covered. They can be analyzed as to the subjects upon which they touch, and as to the mechanisms of enforcement and administration of the systems of industrial law established by the agreement. Each of these points will be discussed briefly and certain points noted with respect to recent trends.[32]

Since the local union is the basic unit in American trade unionism, and since control over a wider area involves many difficulties, it is not surprising that the most common geographic area for the collective agreement is the local market. These local agreements are negotiated and signed by the union sometimes with an association of employers and sometimes with individual employers, but they tend to set the standards for the

[30] See chapter VII, pp. 118, 119

[31] Review of Strikes in 1937 *Monthly Labor Review*, May 1938, p. 1200.

[32] Unfortunately there is no adequate extensive analysis of the collective agreements now in effect in all industries. Raw material exists in the valuable file of collective agreements of the U. S. Bureau of Labor Statistics and was used in the present brief analysis. See articles on collective bargaining in various industries in the *Monthly Labor Review*, 1936–1938; also the National Industrial Conference Board, *Conference Board Service Letter*, August 31, 1937, September 30, 1937, and October 30, 1937

entire local market. Typically, the agreements of the building trades, printing trades, garment trades, metal trades, and many others, are of this nature. In some of these cases the competitive market is a local one, and coincident with the area of collective bargaining, but in more cases this is not true. Tendencies toward standardization over a wider area, however, result in some cases from standards prescribed in union constitutions or by union convention action, from requirements that agreements are subject to approval by international union officials, and by the participation of such officers in local negotiations.[33]

At the other extreme are national agreements, which set standards for the entire national market, and are negotiated by national collective bargaining machinery.[34] Their actual coverage differs, from industries with very extensive organization to others in which the standards have been accepted by only a part of the industry. Such agreements have existed for many years in various branches of the glass industry, in the pottery industry, and among stove molders. The installation of automatic sprinklers is controlled under a national agreement. Early in 1937, a national agreement was signed by the Tile and Mantel Contractors' Association and the bricklayers' union. The agreement in sections of the full-fashioned hosiery industry has for some years exerted great influence toward uniformity of labor conditions in the industry.[35] In addition to these formal collective agreements on a national basis, national collective bargaining on certain points has developed in several cases. On the railroads the collective agreements are made by the various unions with the individual railroads. However, national collective bargaining conferences between the Association of Railway Labor Executives, representing the 21 standard railroad unions, and representatives of the carriers, have resulted in general wage decreases or increases, as well as agreements on other matters, such as dismissal compensation for employees displaced by coordination of railroads. The first national collective bargaining in the men's coat and suit industry, in 1937, resulted in an agreement covering 135,000 members of the Amalgamated Clothing Workers.[36]

The agreements in the bituminous coal industry illustrate intermediate types of agreements, covering broad districts, but not the entire market. The Appalachian agreement is the basic bituminous coal agreement negotiated by representatives of the United Mine Workers and the operators from some eight States. Since detailed agreements for the various districts and agreements for other parts of the country are negotiated later, the Appalachian agreement sets standards which influence all other agreements in the industry. In a number of other industries considerable districts are covered by agreements negotiated and signed by a group of employers. Examples are the agreements in the pulp and paper industry of the Pacific coast, the Pacific coast agreements of the various maritime unions, and the textile dyeing and finishing agreements covering New York and New Jersey. An agreement for the silk and rayon industry, negotiated in 1937 by a group of manufacturers and the Textile Workers' Organizing Committee, was later signed by mills which were reported to employ more than half of the workers of the industry.[37] The United Automobile workers have signed agreements covering tool and die plants and other highly competitive sections of the industry. All of these agreements, in varying degrees, result in a standardization of labor conditions over an area wider than the local labor market.

A fourth type of agreement, now becoming of much greater importance than previously, is the agreement negotiated with the great corporation. When the agreement covers many plants, in different States, and is negotiated between international officers of the union and executives of the corporation, it represents collective bargaining of extensive coverage. A further influence toward standardization of conditions arises in some industries when agreements made with various companies are in much the same form. Agreements in 1936 and 1937 were made with General Motors and other automobile companies, Carnegie-Illinois and other steel companies, Sinclair and other oil companies, Firestone and other rubber companies, the Viscose Corporation, the Aluminum Co. of America, the Anaconda Copper Co., and innumerable others. This development brings the collective agreement extensively into mass-production industries, and results in new problems and new techniques as trade-unions develop methods of participation in the determination of policy under these different conditions.

Classifying collective agreements according to their industrial jurisdiction, we find craft, industrial, and joint-craft agreements, with numerous variations and combinations of the basic types. The craft agreement is typical among the building, printing, and metal trades, the railroad unions, the maritime unions, and others. The industrial agreement, on the other hand, covers essentially all workers in the industry, although the inclusiveness of such coverage differs somewhat from union to union. Typical industrial agreements are those in the coal, brewery, and garment industries for the older unions, and in the automobile, steel, rubber,

[33] U. S. Bureau of Labor Statistics Bulletin No. 618, *Hand Book of American Trade Unions*, 1936 Edition, pp. 19-20.

[34] *Ibid.*, pp. 21-23.

[35] George W. Taylor, "Trade union agreements," in *American Management Association, Personnel Series* No. 27, 1937, pp. 26-35.

[36] *Monthly Labor Review*, July 1937, pp. 23-24.

[37] Committee for Industrial Organization, *Union News Service*, August 23, 1937.

radio, rayon, and textile industries for the new types. In a few cases, especially in the garment industry, craft locals are the basic union unit within the industrial union, but the agreement is an industrial agreement.

There is also a tendency toward joint action in negotiating agreements by craft unions and sometimes craft and industrial unions. The railroad unions since 1932 have negotiated in groups through national collective bargaining conferences on national issues, although the agreements are made by each separate union, or group of unions such as the shop crafts, with each carrier. The Pacific maritime unions negotiate jointly, and their craft agreements signed by the individual unions have similar expiration dates. The building trades through the local Building Trades Councils sometimes cooperate in the negotiation of contracts. In some cases, as in Chicago, a standard agreement negotiated with an employers' association is used by many of the building crafts as the basis of their separate agreements, written with uniform expiration dates.

Instances of agreements negotiated by two or more unions and signed jointly occur also in various industries. In a few cases, notably on the Pacific coast, general joint agreements covering all the building crafts are signed with local contractors' associations. Railroad shop craft agreements, signed by a group of unions, have been mentioned. The Pacific coast pulp and paper agreement is signed by the two international unions of paper makers, and pulp, sulphite, and paper mill workers. The Anaconda Copper Co. has one agreement signed by 14 craft unions of building and metal trades, and another of approximately the same dates, signed by the mine, mill, and smelter workers. The Aluminum Co. of America signed its first agreement with federal locals of aluminum workers and one local union of machinists. Another aluminum agreement reported was signed by 16 unions, federal and craft locals, as a joint council.[38]

A problem arises in connection with such agreements made jointly by a group of local unions, however, over conflicts between local or district autonomy and control by the international unions. In cases where local unions do not have autonomy in the making of agreements, cooperative joint action with other crafts is sometimes hindered. Such difficulties have occurred in the building trades, among the maritime unions, and elsewhere.[39]

While independent craft agreements continue to be the chief form in fields where craft lines remain distinct and craft workers are in the majority, the trend toward joint negotiation is marked in spite of difficulties, and joint agreements are appearing. The development of various types of industrial agreements in other fields where craft lines are of less importance, on the other hand, has become a significant movement in recent years. The usefulness of possible variations in the industrial character of agreements is being tested by the active experiments under way.

[38] *American Federationist*, August 1937, pp. 832–4.

[39] Lewis L. Lorwin, *The American Federation of Labor*, Washington, 1933, pp. 307, 376–77, 387.

#### Subjects Covered by Agreements

A reading of typical collective agreements gives impressive evidence of the extent to which trade unions participate in industrial management. While some agreements specify little more than basic standards of wages and hours and provisions for settlement of disputes, others give highly detailed rules for many aspects of labor and business activity. The more important subjects covered by these agreements may be classified under seven heads: Union recognition, working time, wages, physical conditions, labor supply and employment policies, job protection, and enforcement of the agreement.

The first essential in the agreement is the statement of the extent of recognition of the union, either as the representative for all employees or as the representative only for the members of the union. In the former case the union has sole bargaining rights even though there is no closed shop.

The regulation of working time starts with the establishment of the basic work day and week, and goes on to regulation of overtime and night work, both as to whether and under what conditions it is permissible and as to penalty rates of pay. Regulation or prohibition of work on Sundays and holidays is often included.

As to wages, rates per hour or week, or sometimes piece rates, are usually written into the agreement. Corporation-wide agreements, however, sometimes provide only for local negotiations on wage questions. There are many regulations of pay for overtime, and for work on Sundays or holidays. In a few cases certain holidays are paid for. Vacations with pay are found in an increasing number of cases, for instance in agreements in the rubber, oil, and steel industries, and among street railway and bus companies.[40] Numerous provisions are found for extra pay if workers are called in for a short time, or are forced to wait for work. Permits for lower rates for older or disabled workers occur occasionally. Provisions for the time and method of payment are often included. Coal miners have a right to checkweighmen of their own choosing to inspect the weighing of coal as a basis for payment.

Union participation in job study and the determination of piece rates and production standards is very extensive in some industries. In the garment industries, the highly technical problem of setting piece rates on

[40] *Monthly Labor Review*, June 1937, pp. 1486–88; August 1938, pp. 269–74.

each type of garment, to conform to the standards of weekly minimum rates, is handled in each case by a committee representing the union and the workers in the particular shop, and the manufacturers. Classification of grades of garments, standardization, and the time study of operations is a necessary basis. Examples of job classification procedures may be found in various industries. In certain sections of the hosiery industry, for example, the complicated structure of piece rates is based upon time and production studies made jointly by the union and manufacturers or by the impartial chairman. One petroleum agreement provides for plant committees to work on job classification. Flat glass agreements provide for discussion of the bonus system by an industrial relations committee, and for a survey of occupations for the purpose of establishing uniform rates. Agreements in the automobile and rubber industries permit negotiation on matters of production standards, speed, and wage rates. The purpose of standardizing labor costs throughout the market is also explicit in many agreements in such provisions as that union members shall not work for less than the scale, and that the union shall make no more favorable agreement with other manufacturers.

On physical conditions there are numerous provisions, usually not in detail, requiring the provision of safe and healthful work places. The obligation of the employer to furnish adequate tools, machines, and materials, is sometimes stated. There is occasional regulation of physical examinations, reflecting fear of abuses. Regulation of work loads, speed, and number of men on machines is in part a regulation of physical conditions, although to a greater extent, probably, a form of job protection. A work-load adjustment board is provided in certain textile and other agreements. Many agreements regulate the minimum number of men on certain types of machines.

The first of the regulations of labor supply and employment policies are the closed shop clauses. These are very general among the older well-established unions such as the building and printing trades, and in the garment industry. They are less frequently found in the agreements more recently made by the newer unions. In their place are the provisions for union recognition, clauses following Federal legislation in guaranteeing no discrimination against union members, and no interference with the right of organization. In some cases new employees are to be secured from the union, and the union is responsible for providing an adequate supply of efficient labor. Prohibition of child labor and home work is provided in some agreements. The detailed regulation of apprenticeship by the skilled crafts serves the double purpose of providing properly trained workers and of restricting numbers in the interest of higher rates of pay and regular employment.

The provisions for protection of jobs are very important in many agreements and reflect the great insecurity and scarcity of job opportunity in recent years. Some agreements list permissible causes for discharge, while others provide only that the discharge must be for good cause. Provision for appeals on discharge are frequently found. Under the hosiery agreement the union is to be notified of unsatisfactory work or conduct which might lead to discharge, and assumes responsibility for improving substandard job performances.

As to the job rights of individuals, there are two main schools of thought, one emphasizing seniority rights, and the other equal division of work among regular employees. In the highly seasonal garment industries, equal division of the available work is the rule. This is true also in the hosiery industry and in breweries, and in most bakery agreements. At the other extreme are the seniority provisions in the railroad agreements, and in many of the newer mass-production agreements. Very detailed provisions in the automobile, rubber, petroleum, and other such agreements lay down rules for individual rights in lay-off, rehiring, and sometimes transfer and promotion, in accordance with length of service. The steel agreements provide for consideration of seniority as one among other factors. These agreements reflect the depression experience of job scarcity, and the fear of arbitrary and discriminatory treatment of individuals. Some agreements combine seniority rights with provisions for sharing work in various ways under certain conditions. Thus, many of the mass production agreements provide for a reduction of hours to 32 or 24 before lay-offs of permanent employees. The printers' agreements, while emphasizing seniority, nevertheless of recent years have provided for temporary reduction of hours, the hiring of substitutes, and limitation of overtime. The building trades also developed various methods of work sharing.

Another type of approach to the question of job protection is through the regulation of new machinery and processes, or of output. All of these reflect the fear of unemployment. Some definitely restrictive rules are found, especially in craft agreements. Restriction on the size of paint brush permitted, and of the exchange of type between firms, are examples. Prohibition of any restriction of output is, on the other hand, found in many agreements. The regulation of new machinery, to avoid undue hardship to workers, is seen in work-load adjustment boards in textile agreements, in joint control of the introduction of new machinery and limitation of pressing machines in the dress industry, in the New York cloak makers' unemployment fund for press-

ers, maintained by employer contributions based on the number of his pressing machines,[9] and in the glass manufacturers' agreement "to avoid any unwarranted expansion in the use of cutting-machine equipment." The Appalachian agreement provides for a mechanized mining commission for joint study of the problems resulting from mechanization. Skilled craft workers have tended strongly to protect their jobs by opposing new methods of production. As such craft protection becomes less possible, however, union policy has shifted toward regulation of these changes, as indicated in the examples which have been given.

Restrictions on nonunion materials occur in some agreements, for example in the building and printing trades. Sometimes, the right is reserved to refuse "struck work," coming from a firm whose employees are on strike. In some cases there are prohibitions of prison-made materials. All such provisions may be interpreted as job protection devices for the entire group of union workers.

#### Enforcement

A final series of important provisions includes those relating to the enforcement of the agreement and the settlement of disputes during its life. The period during which the agreement is in force is stated. Prohibition of strikes, lockouts, or stoppages of any sort is usually included. Provision for interpretation of the agreement and settlement of disputes under the agreement is therefore necessary. The negotiation of a new agreement is a different problem, for which in most cases there is no more regulation than the statement of the time and conditions under which negotiations should begin, although occasionally there is provision for arbitration in case of failure to reach an agreement.

The provisions as to enforcement are of too great variety to be discussed in detail. The general outlines can be drawn of typical procedure under the well-established older agreements, however, with separate discussion of the adjustment machinery in the newer, large corporation agreements. Under the former agreements, there is usually a union representative elected in each unit, often called the shop chairman, who has first responsibility for seeing that the agreement is enforced and for taking up disputes with the company. Officers of the local union, the business agent or organizer, are called upon when necessary in adjustments and are in authority over the shop chairman. In many cases an *ad hoc* committee or a joint standing committee, representing the local union and local employers, has authority to decide all cases referred to it. Such joint committees often are authorized to choose an impartial arbitrator in case of their failure to agree. In many agreements there is complete commitment on both sides to refer to arbitration, if necessary, any disputes over the interpretation of the agreement. Under the Railway Labor Act arbitration is compulsory for any disputes arising over interpretation of the agreements and not settled by the parties themselves. A National Railroad Adjustment Board, composed of representatives of the unions and carriers, was provided for that purpose.

In a number of cases, industries have established permanent impartial machinery, which functions effectively in interpreting and enforcing the agreements and maintaining the standards. The permanent impartial chairmen play a very important role in the men's and women's clothing industries in the chief markets, in the hosiery industry, and in some others. They have extensive powers to examine books and records, call witnesses, interpret the agreement, make decisions and assess penalties for violations, and work in close cooperation with the representatives of the union and the employers' associations in the policing of the industry.

In agreements of large corporations in the mass production industries, the machinery for settlement of individual grievances or other disputes in the plant, as well as for negotiation on questions of broader interest, is much emphasized. Provision is made for union representation in each division of the plant and for a shop bargaining committee which in some cases is composed of the division representatives. In other cases a "steward system" provides a union steward or representative in each small section, while a smaller group of representatives is elected as the bargaining committee. The agreements outline the steps to be taken in settling disputes, from the first contact between an aggrieved worker or his representative and the foreman, to the bargaining committee and the plant management, to higher union officials and corporation management, and in some cases to arbitration. Experimentation is under way in these industries with various forms of bargaining machinery, in an effort to establish systems that will handle quickly and effectively the grievances that arise among the thousands of workers in any large plant.

The administrative machinery under the agreement is of especial importance in the case of the corporation-wide agreement in mass production industries. The agreements themselves tend to be relatively simple, and to leave much to local collective bargaining. In these cases the agreements establish certain general standards for hours, overtime, sometimes wages, and other matters. In addition they include detailed regulations as to individual rights on seniority, division of work, and other matters. The collective bargaining machinery is expected to handle the detailed local application of the general labor standards, to take up any other matters

[9] Lazare Teper, *The Women's Garment Industry*, International Ladies Garment Workers Union, New York, 1937, p. 27.

of interest to workers and management as they arise in the plants, and to settle any individual grievances. Flexible adjustment to the changing needs of production in a large plant is thus possible through the local and immediate consideration of problems by the local union committee and the management. Collective bargaining here includes this highly important and more or less continuous negotiation process in the plant, as well as the making of the written agreement.

### The Place of Trade-Unions in the American Economy

Among the varied forces which are changing the American economy from one regulated by impersonal competition to one in which policies are administratively determined is the establishment of trade-unions on a basis of such stability and strength that they are able to influence the determination of policies in many industries. Trade-unions in a small number of cases in the past, and in an increasing number of industries now, stand among the other groups of ownership, corporate management, or Government agencies which make decisions crucial to the direction of industry.

The preceding summary has brought out the extent to which trade-unions were participating in industrial management in 1937. The marked increase in union membership, especially among semiskilled and unskilled, as well as among white-collar, professional, and Government workers, reflected an organizing movement of great vitality. Collective bargaining on a basis of written trade agreements was being carried on more widely than ever before in this country. Agreements signed by great corporations were numerous in the mass production industries. Agreements were tending to cover wider geographic areas, both in the corporation-wide agreements covering a number of plants, and in the case of those agreements binding a group of competitors. Agreements were written increasingly on an industrial basis, whether they were signed by a single industrial union or by a group of craft or semi-industrial unions in cooperation.

In various parts of industry, there is evidence of a tendency for organized workers in dealing with management to give broad consideration to the economic problems of the industry. The trend toward agreements on an industrial or semi-industrial basis, rather than covering single crafts only, is favorable to a broader view of industrial problems. In the clothing industries, for example, both the Amalgamated Clothing Workers and the International Ladies' Garment Workers Union have long records of working with the employers for stabilization of competitive conditions and efficient operation in the interest of both employers and workers. Under the successive agreements in the hosiery industry the union and the employers have attempted to deal with a difficult competitive situation, while the union accepts responsibility as to efficiency of its members. In the bituminous coal industry a joint Mechanized Mining Commission has been established for the study of problems arising from mechanization. On some of the railroads, union-management cooperation resulted in active interest by the men in the increase of efficiency, and benefits to both men and management.[42] The Steel Workers Organizing Committee has published a handbook on *Production Problems*, in which it urges local programs of union-management cooperation, after the union is thoroughly established on a collective bargaining basis.

Signs of such a broad interest in the problems of the industry as a whole are apparent also in the economic research and education departments of a number of unions. Outstanding examples are the International Ladies' Garment Workers Union, the International Association of Machinists, and the International Brotherhood of Electrical Workers. Among the younger unions, the United Automobile Workers, the Steel Workers Organizing Committee, the United Rubber Workers and others have set up research departments. Recognition of the need for continuing study of the economics of the industry as a basis for policy making appears to be on an increase among the unions.

[42] For a recent discussion, see statement of Otto S. Beyer, in National Labor Relations Board, Division of Economic Research, Bulletin No. 1. *Governmental Protection of Labor's Right to Organize, 1936*, pp. 27–31.

# APPENDIX 15.—PRODUCTIVE ACTIVITY OF GOVERNMENT[1]

Some appreciation of the extent, though not necessarily a measure of the importance, of the economic activity of government in the United States can be gained by reference to data showing how many people work under the administrative control of governmental agencies, what functions they perform, and the results of this activity in terms of income produced. Since statistical data relating to the economic activity of governmental agencies in this country are incomplete in many respects, only the main highlights can be shown in this analysis. If available data permitted, it would be interesting also to disclose quantitatively the range of goods and services produced by governmental agencies and the quantities of capital goods and land utilized, in addition to the manpower consumed, in producing these goods and services. Data on these points, however, are too fragmentary to provide a complete or detailed description of the productive activity of government.

### The Number of Public Employees

According to the Commission of Inquiry on Public Service Personnel, the United States comprises some 175,418 separate political jurisdictions: the Federal Government and the District of Columbia, the 48 States, 3,053 counties, 16,366 incorporated municipalities, 127,108 school districts, and 28,842 towns, townships, and other civil divisions.[2] The number of employees of each jurisdiction ranges from only elected officials and no appointive administrative employees in a few jurisdictions, or a single school teacher in many rural school districts, to many thousands in the larger cities and states, and over a million in the Federal service. No direct enumeration of all public employees in the United States has ever been made. However, estimates are available based upon (1) sample questionnaire returns from various jurisdictions, (2) division of the estimated or actual total of governmental salary and wage-payments, including payments to temporary and part-time employees, by the average annual compensation of permanent full-time employees, and (3) actual pay-roll records of some agencies. On these bases, the Division of Economic Research of the Bureau of Foreign and Domestic Commerce has made estimates of the total number of public employees, excluding employees on work-relief programs, for each year during the period 1929 through 1936, and has broken down these estimates to show employment by main governmental jurisdiction for all except educational employees.

Table I presents these estimates by Federal, State, city, and county jurisdictions, adapted to include employees in public education, but excluding persons employed on emergency work-relief projects. This table shows that the largest number of government employees, exclusive of work-relief, are employed by municipalities. Since 1929, however, the number of municipal employees and the proportion of all nonrelief government employees which they represent, has declined, while Federal and State employment has increased. Whereas Federal nonrelief employees constituted 27.0 percent of all government employees in 1929, they amounted to 32.2 per cent in 1936. If work-relief employees were included, the Federal employees would, of course, comprise a much greater proportion of the total. The total number of nonrelief government employees increased by 13.7 percent during these 7 years. The bulk of this increase came from 1933 to 1936.

In table II, the number of government employees, (excluding work relief) is compared to the total gainfully employed in the United States. The proportion represented by government employees was 7.1 percent in 1929 and 8.7 percent in 1936. The increase in the proportion of employees by government was greater than the absolute increase in government employment during these years owing to the decline in private employment. At the low point in total employment, 1932, government employees amounted to 9.2 percent of all gainfully employed persons. Charts II and XVII in the text have shown the relation of Government employment to employment in specific segments of the economy in 1935.[3]

An accounting of all government employment in the United States requires analysis of the work-relief employees of recent years as well as the persons engaged in performing what might be regarded as the ordinary functions of government.

During 1935 an average of approximately 2,540,700 different persons received some work-relief employment on the various works programs financed chiefly by the Federal Government and operated by various agencies of the Federal, State and local governments.

[1] Appendix 15 was prepared by James C. Nelson.

[2] *Better Government Personnel*, 1935, p. 87.

[3] See pp. 61 and 75.

The average number of persons employed by all governmental jurisdictions under the various work-relief programs in 1935 is shown in table III and is compared to the total employed in performing ordinary government functions. It is not possible to convert this figure for work-relief employment into the equivalent of full-time employment. The figure arrived at by adding the total of these employees to the total 3,442,800 full-time equivalent [4] employees estimated as engaged in performing the ordinary functions of government in 1935 gives only a rough estimate of the total number of persons employed in this year. On the basis of this estimate it appears that on the average nearly 6 million persons were employed in full-time or part-time work by government in 1935, of which 57.5 percent represented employment resulting from ordinary governmental functions and 42.5 percent work-relief employment. If the work-relief employees had been converted to full-time equivalents, the percentage representing employment arising from performing ordinary governmental functions would doubtless have been considerably higher, and the percentage represented by work relief lower. It was not possible to break down the volume of employment on the various work-relief programs to show the number of persons employed by each main governmental jurisdiction, as in the case of employment resulting from the ordinary activities of government.

**Functional Distribution of Public Employees**

The various governmental jurisdictions in the United States are engaged in performing a wide variety of functions, such as regulation of traffic; general law enforcement by the prosecuting attorneys, police, and courts; carrying the mails; the construction and maintenance of public roads and streets and the provision of harbor facilities and ship channels; the operation of public schools; the maintenance of an army and navy for the national defense; fire protection; the provision of facilities for recreation and parks; sewage disposal; and the regulation and promotion of industry and commerce.

Data are not available in a central source from which to build up a complete distribution of public employees by specific functions performed. However, the large majority of public service personnel (78 percent) is engaged in furnishing a few basic services. Fairly complete data regarding the number of employees engaged in producing this group of services are available and are shown in table IV for the year 1935.

Over one-third of the total, or 1,152,400 persons, were engaged in producing public educational services in 1935. This number includes all educational personnel in the public schools, including administrative and operation employees, employees of school boards and State and county education departments, as well as teachers. It does not include the teaching staff of the United States Naval Academy at Annapolis, the United States Military Academy at West Point, or of the Coast Guard Academy at New London. These educational employees are treated as military employees by the Department of Commerce.

Approximately one-fifth, 647,300, were employed in the construction and maintenance of public roads, highways, and streets. The proportion of public employees engaged in performance of this function would doubtless have been higher if it had been possible to include all of the employees of the municipal governments engaged in maintaining and constructing city streets. An attempt was made to secure information relating to these employees outside of the emergency work-relief programs of the recent years and force-account employment on projects financed by Public Works Administration.[5] The estimate of 647,300 persons employed on public roads in 1935 includes a total of 1,100 employees engaged in city street construction on projects financed by the Public Works Administration. If to this total is added an estimated 740,100 persons employed by governmental agencies on a work-relief basis in 1935 to work upon public roads and streets, a total of 1,387,400 is derived as the aggregate number of persons engaged in constructing and maintaining the public highways in this year.[6] While these estimates are rough and do not convert employment to a full-time equivalent basis, it is clear that the construction and maintenance of public roads is one of the largest economic activities of government in the United States.

The military services ranked third among the various functions performed by government employees. An average of 268,700 persons were engaged in the Army and Navy during this year, or 7.8 percent of the total.[7] Included in this total are the active officers

[4] The Works Progress Administration reported that it would be very difficult to convert work-relief employment into full-time equivalent man-years, owing to the fact that there was no standard work month in the various communities. The length of time that each person worked was determined by dividing the maximum wage allowed by the average wage per hour paid by each community.

[5] The Bureau of Public Roads has no data that could be used as a basis for making even the roughest guess.

[6] Work-relief road employees were estimated by multiplying the total number of persons employed in work-relief projects under the Federal Emergency Relief Administration each month during 1935 by the average ratio of highway, road, and street employees to the total found by this agency for the 4 weeks ending January 17, February 21, March 21, and April 18, 1935. Then, the average number of employees engaged in street and highway construction projects of the Works Progress Administration for each month during the months of July through December, 1935, was computed. The Works Progress Administration supplied data showing the man-hours worked on a force-account basis on highways, roads, and streets under its Works Program and total man-hours worked on all projects. The ratio of man-hours of highway work to all Works Progress Administration work each month was applied to total number of employees engaged in all projects to find the number employed on Works Progress Administration streets and highway projects. The average number employed on both programs was derived by adding the employees on the Works Progress Administration highway projects each month during the last half of 1935 to the Federal Emergency Relief Administration employees for the corresponding months and averaging all monthly figures for the year.

[7] An average of the 12 monthly figures reported by the War and Navy Departments to the Bureau of Labor Statistics, plus the average number of West Point cadets.

and men of the United States Navy, the United States Marines, and the Coast Guard; the commissioned and warrant officers, enlisted men, and the nurses of the regular army; the enlisted men of the Philippine Scouts; and the midshipmen of the Naval Academy and the Coast Guard Academy; and the Cadets in training at West Point. Persons retired from the service and the reserve officers of the Reserve Officers' Training Corps are not included in this total.

The Postal Service accounted for about the same number of employees as the Military Service in 1935. An average of 260,300 persons were engaged in distributing the mail in this period, of 7.6 percent of the total.

The four services of public education, construction and maintenance of public roads, national defense, and carrying the mails, accounted for over two-thirds of the entire public personnel in 1935. When the important services of police and fire protection are included with this group of basic services approximately three-fourths of the entire public personnel, excluding the work-relief employees, are accounted for. The remainder of the public employees are engaged in performing a wide range of services, including the provision of water supplies,[8] sewage disposal and parks, reclamation and conservation, and performing the legislative, executive, judicial, and regulatory functions of government.

It should be noted that work-relief employees are not included in the functional distribution given in table IV. However, a rough impression of the functions performed by the work-relief employees in 1935 can be obtained from the distribution of Federal Emergency Relief Administration work-relief employees in January 1935 and Works Progress Administration employees in December 1935. These are shown in table V. Federal Emergency Relief Administration employees are shown on the basis of number of persons employed. Works Progress Administration employees are shown on the basis of man-hours. In January 1935, Federal Emergency Relief Administration projects included 87 percent of work-relief employees. In December 1935, Works Progress Administration included 85 percent of work-relief employees.[9]

The Civilian Conservation Corps accounted for most of the remaining work-relief employees in 1935. Data showing the number of employees engaged or man-hours worked by type of function performed are not available for this agency. The Civilian Conservation workers are chiefly engaged in various types of activity relating to the national and State parks, national forests, wildlife preserves, and other public domain. These activities include building park roads,[10] trails, bridges, and utilities; flood-control, irrigation, and water conservation activity; erosion control, forest culture, and fire control.

## Income Produced by Government

In the absence of adequate data with which to appraise the capital goods and land used by government and the value of the product of government activity, estimates of the share of the total national income which is produced by government may be used to supplement data on government employment.

[8] About 75 percent of the water systems are municipally operated. Cf., Hartwell, Ronald P., "Water—A Growing Utility," *Magazine of Wall Street*, vol. 46, June 28, 1930, p. 398. In its report of December 1, 1934, p. 342, the National Resources Board stated that an analysis of 67,000,000 water customers shows that about 80 percent are served by public supply systems.

[9] The Works Progress Administration began its operation as of July 1, 1935. Over a period of some months it replaced the Federal Emergency Relief Administration program. In January and December the distribution of work-relief employment was as follows:

| | Number of persons employed | | Percent to total | |
|---|---|---|---|---|
| | January | December | January | December |
| Federal Emergency Relief Administration [a] | 2,446,266 | 50,411 | 86.7 | 1.7 |
| Works Progress Administration [b] | | 2,902,712 | | 84.6 |
| Civilian Conservation Corps [c] | 369,160 | 468,071 | 13.1 | 13.6 |
| Public Works Administration [d] | 4,281 | 4,281 | .2 | .1 |
| Total | 2,819,707 | 3,434,478 | 100.0 | 100.0 |

[a] Source: *Statistical Summary of Emergency Relief Activities*, January 1935 through December 1935, Federal Emergency Relief Administration, table 8, p. 21, 22. The figures shown herein relate to the number of different cases receiving some emergency work relief earnings and not the average number of full-time equivalent employees on the Federal Emergency Relief Administration programs. A certain amount of duplication exists between the reports for emergency work relief programs and Works Program employment under the Works Progress Administration, because of the transfer of workers from the former programs to the latter. These duplications have not been subtracted from the Federal Emergency Relief Administration employment shown herein. The number of students receiving work-relief employment under the Federal Emergency Relief Administration student-aid program is not included herein.

[b] Source: Special tabulations, Division of Research, Statistics, and Records, Works Progress Administration and Division of Construction and Public Employment, Bureau of Labor Statistics. The figures herein shown relate to the work programs operated by the Works Progress Administration and were compiled from actual records kept. These projects are planned and sponsored by the States and localities and financed by both Federal and State funds. However, except for a few technical and supervisory employees furnished by sponsors, all of the workers are carried on the Federal pay roll. The figures shown represent the number of different persons employed, not the average number of full-time equivalent man-years represented by the employment figures. The number of persons receiving work-relief employment under the National Youth Administration is not included herein. Persons employed on the Federal construction projects supervised by various Federal agencies, excluding the Bureau of Public Roads, but financed by the Works Progress Administration are included. They are estimated on the basis of the maximum number of employees reported in any one week during the month of the Bureau of Labor Statistics. Source: Special tabulation submitted by letter of Sept. 14, 1937, from Herman B. Byer, Division of Construction and Public Employment, Bureau of Labor Statistics.

[c] Source: Special tabulation, Division of Construction and Public Employment, Bureau of Labor Statistics.

[d] Source: Estimate by Public Works Administration on basis of reports from the cooperating agencies. Average number of persons employed on force account basis on projects financed by Public Works Administration for year on both Federal and non-Federal projects, exclusive of employment on streets and highways included in the figures shown for the public roads function.

[10] An impression of the road building activities of the Civilian Conservation Corps workers during the period April 1933 to April 1937, can be gained from the following tabulation showing the miles of roads and trails constructed or maintained in this period:

| Type of job | Miles constructed | Miles maintained |
|---|---|---|
| Roads: | | |
| Truck trails | 80,828.9 | 243,877.9 |
| Minor | 4,489.9 | 22,234.6 |
| Highways | 410.1 | 9,586.8 |
| Park roads | 1,005.3 | 8.1 |
| Trails: | | |
| Foot | 9,970.8 | 18,471.1 |
| Horse | 10,975.1 | 36,300.3 |

Source: Special tabulation by the Civilian Conservation Corps.

Table VI shows the estimates by the United States Department of Commerce of the income produced by government annually during the period from 1929 through 1936, and the ratio of income produced by government to the total income produced for each year during this period. It will be noted that while total national income produced dropped from 81 billions of dollars in 1929 to a low of 40 billions of dollars in 1932, income produced by government during this period remained very stable. As a result, the proportion of the national income produced by government increased from 8.1 percent in 1929 to 16.8 percent in 1932. Since 1932, the proportion produced by government has decreased, but it has remained well above the proportion of the earlier years, and amounted to nearly 15 percent in 1935 and 1936.

Although the above data on employment and income produced are sufficient to indicate that government must be regarded as one of the leading factors in the structure of the economy, they are only suggestive of the significance to the economy of government activity. Full understanding of government's role would require careful analysis of the governmental function of providing a framework for individual activity as well as of the activities of government as a direct producer and distributor of wealth. The effects of government controls in each industrial segment of the economy would have to be measured, and extensive data on governmental operations which result in direct production of goods and services in each industry would have to be assembled, before the role of government in the economic system could be fully described.

TABLE I.—*Number of employees in government service in the United States, excluding employees on work-relief programs, by main governmental jurisdiction, 1929–36* [1]

| Jurisdiction | 1929 | | 1930 | | 1931 | | 1932 | | 1933 | | 1934 | | 1935 | | 1936 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Number of employees [2] | Percent of total | Number of employees [2] | Percent of total | Number of employees [2] | Percent of total | Number of employees [2] | Percent of total | Number of employees [2] | Percent of total | Number of employees [2] | Percent of total | Number of employees [2] | Percent of total | Number of employees [2] | Percent of total |
| Federal | 862,000 | 27.0 | 873,000 | 26.3 | 880,400 | 26.1 | 864,000 | 26.4 | 855,900 | 26.7 | 941,500 | 28.5 | 1,049,900 | 30.5 | 1,167,000 | 32.2 |
| State | 301,600 | 9.5 | 319,400 | 9.6 | 336,600 | 10.0 | 339,400 | 10.4 | 343,800 | 10.7 | 356,800 | 10.8 | 377,700 | 11.0 | 389,900 | 10.8 |
| City [3] | 1,296,500 | 40.7 | 1,355,000 | 40.9 | 1,359,900 | 40.3 | 1,303,900 | 39.8 | 1,252,800 | 39.2 | 1,253,600 | 38.0 | 1,258,800 | 36.5 | 1,291,300 | 35.6 |
| County, township, and minor civil divisions | 729,000 | 22.8 | 769,100 | 23.2 | 796,800 | 23.6 | 764,100 | 23.4 | 747,600 | 23.4 | 750,900 | 22.7 | 756,400 | 22.0 | 777,000 | 21.4 |
| Total | 3,189,100 | 100.0 | 3,316,500 | 100.0 | 3,373,700 | 100.0 | 3,271,400 | 100.0 | 3,200,100 | 100.0 | 3,302,800 | 100.0 | 3,442,800 | 100.0 | 3,625,200 | 100.0 |

[1] Source: Adapted from special tabulations by the National Income Section of the Bureau of Foreign and Domestic Commerce, U. S. Department of Commerce. Since the Department of Commerce tabulation does not distribute employees in public education by governmental division, except in the case of the Federal Government, it was necessary to estimate the number of this class of employees that should be distributed to State, city, and county jurisdictions. A tabulation of the number of educational employees in the United States, excluding operation employees, maintenance employees, bus drivers, full-time health officers, and local attendance officers, reported to the Office of Education in 1934 shows that 4.9 percent of these employees are employed by State governments, 52.93 percent by city governments, and 42.17 percent by county and other local governments. The total number of employees in public education shown by the Department of Commerce for each year during the period 1929–36 was then multiplied by these ratios to find the number of employees in public education to be distributed to each governmental jurisdiction, other than Federal.

[2] Wherever available data permitted, the number of public employees reported to the Department of Commerce were converted to a full time equivalent basis.

[3] Cities are defined by the Department of Commerce as all incorporated places. This definition has been followed herein

TABLE II.—*Comparison of number of persons employed by government, excluding employees on work-relief programs, to total number employed by all industrial divisions in the United States, 1929–36* [1]

[In thousands]

| Class of employment | 1929 | | 1930 | | 1931 | | 1932 | | 1933 | | 1934 | | 1935 | | 1936 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Number employed | Percent of total | Number employed | Percent of total | Number employed | Percent of total | Number employed | Percent of total | Number employed | Percent of total | Number employed | Percent of total | Number employed | Percent of total | Number employed | Percent of total |
| All industrial divisions, excluding work-relief employees | 44,648 | 100.0 | 42,601 | 100.0 | 39,180 | 100.0 | 35,690 | 100.0 | 35,902 | 100.0 | 38,355 | 100.0 | 39,426 | 100.0 | 41,487 | 100.0 |
| Government excluding work-relief employees | 3,189 | 7.1 | 3,316 | 7.8 | 3,371 | 8.6 | 3,271 | 9.2 | 3,200 | 8.9 | 3,303 | 8.6 | 3,443 | 8.7 | 3,625 | 8.7 |

[1] Adapted from special tabulations submitted by the National Income Section of the Division of Economic Research, Bureau of Foreign and Domestic Commerce, Department of Commerce.

TABLE III.—*Number of employees in government service in the United States, including employees on work-relief programs, in the year 1935* [1]

| Class of employment and jurisdiction | Number of persons employed | Percent of total |
|---|---|---|
| Ordinary governmental functions: [2] | | |
| Federal | 1,049,700 | 17.5 |
| State | 377,700 | 6.3 |
| City | 1,278,800 | 21.1 |
| County, township, and minor civil divisions | 756,400 | 12.6 |
| Emergency Work Relief programs [3] | 2,540,700 | 42.5 |
| Grand total number of persons employed by Government | 5,983,500 | 100.0 |

[1] Wherever the data permitted, the number of public employees shown has been converted to a calendar year basis.

[2] Full-time equivalents. See table I.

[3] Not converted to full-time equivalents. Includes the number of persons employed on works programs projects operated directly by the Works Progress Administration, on work relief projects of Federal agencies financed by the Works Progress Administration, on work-relief projects financed and supervised by the Federal Emergency Relief Administration, on projects of the Civilian Conservation Corps, and on Federal and non-Federal projects, other than streets and highways, financed by the Public Works Administration. Where the projects involved construction in which some of the work was done by contractors, as in the case of the Public Works Administration projects especially, only the force-account work of governmental agencies has been included. Accordingly, the number of persons employed shown herein relates to persons on governmental pay rolls, not the entire volume of employment deriving from expenditures of governmental funds. The source of the data are as follows: For the figures relating to the Works Program of the Works Progress Administration and the Federal Emergency Relief Administration projects, special tabulations by the Works Progress Administration based upon pay-roll records and reports from participating agencies; for the data relating to work-relief projects of Federal agencies financed by Works Progress Administration, a special Bureau of Labor Statistics tabulation of estimated force-account employment based upon monthly reports of employment received direct from the Federal agency supervising the projects; for the Civilian Conservation Corps projects a special Bureau of Labor Statistics tabulation showing revised monthly employment in the calendar year 1935, for the projects financed by Public Works Administration, an estimate by Public Works Administration of the force-account employment based upon reports from participating agencies.

TABLE IV.—*Number of employees in government service in the United States, excluding employees on work relief programs, by major economic functions performed in the year 1935* [1]

| Functional class | Number of persons employed | Percent of total employees |
|---|---|---|
| Education [2] | 1,152,400 | 33.4 |
| Public roads [3] | 647,300 | 18.8 |
| Military service [4] | 268,700 | 7.8 |
| Post office [5] | 260,300 | 7.6 |
| Police department [6] | 178,300 | 5.2 |
| Municipal fire department [7] | 79,400 | 2.3 |
| Municipal power plant [8] | 19,000 | .6 |
| Municipal street railways [9] | 9,900 | .3 |
| All other municipal public utilities [9] | 63,600 | 1.8 |
| All other functions | 763,900 | 22.2 |
| Total all functions | 3,442,800 | 100.0 |

[1] Wherever available data permitted, the figures relating to the number of public employees shown have been converted to a full-time equivalent basis and related to the calendar year 1935.

[2] Source: Special tabulation by the National Income Section of the Bureau of Foreign and Domestic Commerce.

[3] Source: Estimates by the Bureau of Public Roads of the man-months of force account work on State roads, during the fiscal year 1935, based upon regular reports of the State highway departments and of the man-months of force-account work on local rural roads based upon an estimated expenditure of $288,000,000 for local rural roads during the fiscal year 1934 (the last year for which data are available) and a factor of 70 percent of expenditures for these roads for labor and 30 percent for materials and supervision; estimates by Projects Division of the Public Works Administration of the force-account employment resulting from road construction and maintenance financed by the Public Works Administration during the fiscal year ending June 30, 1935. Except for 1,095 man-years financed by the Public Works Administration, force-account employment on city streets is not included.

[4] Source: Average for year 1935 based on monthly reports of the Civil Service Commission.

[5] Includes employees for the fiscal year ending June 30, 1935, of such agencies of the Federal Government as the Federal Bureau of Investigation, the Post Office Inspection Service, the Immigration Border Control of the Department of Labor, and in the Treasury Department the Secret Service Division, the Intelligence Unit and Alcohol Tax Unit of the Bureau of Internal Revenue, the Bureau of Narcotics, and the Customs Agency Service of the Bureau of Customs; the employees of the State police and highway patrol departments as of June 1, 1935; an estimate for the year 1935 of the number of county sheriffs based upon figures of the *Census of Occupations* for 1910, 1920, and 1930; the estimate of the Department of Commerce of the number of city police employees raised to include cities with population below 2,500; the employees of the Federal and State prisons as shown by the census report, *Prisoners in State and Federal Prisons and Reformatories*, for the calendar year 1935; and the figures shown in the *Census of Occupations* for public guards, watchmen, and doorkeepers for 1930 reduced by the number of keepers and guards in Federal and State prisons in 1935. The figures for the Federal agencies were supplied by them direct. The American Association of Motor Vehicle Administrators supplied the figures as to State police.

[6] Source: *Statistical Abstract for 1936*, table 100, p. 352. The data given are the census figures for 1932, the last year that a census of the electrical industry was taken.

[7] Source: *Census of Electric and Street Railways and Motor Bus Operations of Affiliates and Successors, 1932*. The data shown are for the year 1932, the latest year available.

[8] Source: The Commission of Inquiry of Public Service Personnel in its publication, *Better Government Personnel*, estimated on the basis of a sample taken by the Department of Commerce by the questionnaire method that there were 92,500 employees in municipal public utilities as of June 30, 1932. The figure shown above is derived by subtracting the employees of the municipal power plants and the street railways as shown by the Bureau of the Census for 1932.

TABLE V. *Percent distribution by type of project of persons on work-relief projects—January and December 1935*

| Type of project | Percent distribution Federal Emergency Relief Administration January 1935 [1] (number persons working) | Percent distribution Works Progress Administration December 1935 [2] (man-hours) |
|---|---|---|
| Highways, roads, and streets | 35.0 | 41.8 |
| Public buildings (including housing) | 9.3 | 8.0 |
| Recreational facilities | 5.3 | 12.6 |
| Airports and other transportation | | 1.7 |
| Sewer systems and other public utilities | 10.0 | 8.3 |
| Sanitation and health projects | 7.2 | 4.1 |
| Conservation | 14.0 | 5.7 |
| Education | .5 | 1.1 |
| Professional and clerical | 3.5 | 4.1 |
| Goods | 14.1 | 10.6 |
| Miscellaneous | 1.1 | 2.0 |
| Total | 100.0 | 100.0 |

[1] The distribution is based on a tabulation of pay rolls covering 97 percent of the total number of both relief and nonrelief persons working during the week ending Jan. 17, 1935, or 1,774,210 persons out of a total of 1,827,589.

[2] Source: Special tabulation provided by Works Progress Administration.

TABLE VI.—*Comparison of the income produced by government, including work-relief wages, with the income produced by all industrial divisions in the United States, 1929–36* [1]

[In millions of dollars]

| Industrial division | 1929 | | 1930 | | 1931 | | 1932 | | 1933 | | 1934 | | 1935 | | 1936 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Income produced | Percent of total | Income produced | Percent of total | Income produced | Percent of total | Income produced | Percent of total | Income produced | Percent of total | Income produced | Percent of total | Income produced | Percent of total | Income produced | Percent of total |
| All industrial divisions, including work-relief wages [2] | 81,128 | 100.0 | 68,302 | 100.0 | 53,822 | 100.0 | 40,014 | 100.0 | 42,256 | 100.0 | 50,052 | 100.0 | 55,186 | 100.0 | 63,466 | 100.0 |
| Government, including work-relief wages [2] | 6,540 | 8.1 | 6,720 | 9.8 | 6,847 | 12.7 | 6,727 | 16.8 | 6,907 | 16.3 | 7,949 | 15.9 | 8,247 | 14.9 | 9,785 | 15.4 |

[1] Adapted from special tabulations by the National Income Section of the Division of Economic Research, Bureau of Foreign and Domestic Commerce. See *National Income in the United States, 1929–35*, for explanation of the method used by the Department of Commerce in making these estimates.

[2] Include the following amounts of work-relief wages in the last 4 of these years: $611,000,000 in 1933; $1,395,000,000 in 1934; $1,273,000,000 in 1935; and $2,058,000,000 in 1936.

# APPENDIX 16.—MAPS OF INDUSTRIAL LOCATION, 1935[1]

The maps in this appendix supplement the maps which are contained in chapter IV. Those showing the location of manufacturing plants in 1935 are derived from the *1935 Census of Manufactures* and are constructed in the same manner as the ones in chapter IV, a dot for each establishment regardless of size. It would be desirable to map the location of each industry in terms of numbers employed instead of in terms of plant location. The Bureau of the Census, however, is unable to release the necessary material, for all returns made to it by individuals are strictly confidential, and the Bureau is prohibited by law from disclosing individual data. The maps are arranged in groups of related industries to show the flow of products through the manufacturing processes. All manufacturing industries employing 25,000 or more persons in 1935 are shown either in chapter IV or in this appendix, together with several smaller industries related to the larger ones. The text and appendix maps combined represent 80.5 percent of all persons engaged in manufacturing.

The maps of agricultural products, in the text and in this appendix, have been supplied by the Bureau of Agricultural Economics, United States Department of Agriculture. They cover the main crops and livestock and include 83.5 percent of all persons engaged in agriculture. In addition, 74 percent of the miners are represented by the maps of coal, iron ore, and petroleum.

*Agricultural Products.*—Maps A–1, A–2, and A–4 show the distribution of the major feed and forage crops, in addition to corn (ch. IV, map 14). Although some corn, oats, and barley reach the consumer directly, these crops for the most part are the first step in the production of meat and dairy products, or the second step where grass fed cattle are shipped from grazing areas[2] to feeding centers for fattening. The second step is shown in map A–3, poultry, and in the maps of livestock, A–5, A–7, A–9, A–10. The production of beef and swine is closely associated geographically with the production of feed crops while sheep are more generally to be found in the grazing areas. Poultry are widely distributed in all types of agricultural areas where they constitute a supplementary crop and in the vicinity of urban centers and convenient markets.

Maps A–5 to A–8 show two distinct patterns of location in two branches of the meat and dairy industries. The production of beef cattle is closely associated geographically with the location of grazing areas and the production of corn for fattening. The meat packing industry, shown in map A–6, consists of the large packing centers of the meat raising areas, Chicago, St. Louis, Kansas City, Omaha, and St. Paul, the smaller packing houses adjacent to urban population centers, and a scattering of local abbatoirs, slaughtering locally raised livestock largely for local consumption.

The distribution of dairy cows shown in map A–7 differs noticeably from the distribution of beef cattle. Whereas dairy cattle are heavily localized in the Wisconsin-Minnesota areas north of the beef cattle center, they are absent from the western range and are very plentiful in the northeastern section near the centers of urban population. The dairy products industry contains two parts, fluid milk, and butter and other products. The bottling and distribution of fluid milk follows closely the pattern of urban consumer distribution, and is not here shown. Butter, shown in map A–8, is clearly associated with the raw material. Its concentration follows the distribution of dairy cows except for the dairy cattle in the vicinities of the northeastern cities where almost the entire product goes into fluid milk.

From the packing houses a part of the product goes into a further stage of fabrication, namely, leather. The distribution of the leather industry, map A–11, is largely unrelated to the location of the major packing centers. Although some leather manufacture is carried on in the Chicago area, this industry is mainly associated with the next stage of fabrication into boots and shoes and other leather products. The boot and shoe industry, shown on map A–12, is an industry localized in a series of centers. Originally almost entirely a New England industry it has developed centers in New York State, the St. Louis area, southern Ohio, eastern Pennsylvania, and Illinois.

The distribution of fruits and vegetables raised for market is shown in maps A–13 and A–14. A substantial proportion of these products reaches the consumer in a canned rather than fresh state. The fruit and vegetable canning industry shown in map A–15

[1] Appendix 16 was prepared by Caroline F. Ware and Grace W. Knott.
[2] See ch. III, map 4

is clearly attached to the fruit and vegetable raising areas. Serving the canning industry is the manufacture of tin cans which, because of their bulk, tend to be fabricated in the vicinity of the point where they are used. Map A–16 shows the tin can industry in most, though not all, centers of canning. This map does not show tin cans alone, for other types of containers than tin cans and other tinware are included.

These series of maps, A–1 to A–16, together with maps 13–16 in chapter IV, show the growing and processing of principal foods. With the exception of fish, they have included the main foods produced in the United States and, with the exception of liquor manufacture, sugar processing, condensed milk, cheese, ice cream, prepared cereals, and some miscellaneous food preparations, all the commercial food manufacturing activity of any substantial volume.

Maps A–17 to A–20 show tobacco and its products, together with fertilizer which is extensively used in tobacco production. The latter, shown in map A–17, is also used in the production of truck, potatoes, and cotton, and in mixed farming, and its distribution reflects these flows as well as that to tobacco culture. Tobacco growing and the manufacture of cigarettes are highly localized and closely associated. Cigars, however, follow a very different pattern, for cigar manufacture is in large measure still an unmechanized industry located in urban centers.

*Textiles.*—Maps A–21 to A–28 confirm the evidence of the cotton textile maps in chapter IV as to the footloose character of textile industries. The location of woolen manufacture in the northeastern industrial areas, especially New England, bears slight relation to the location of resources. The manufacture of silk is highly localized on the eastern seaboard although the raw silk is imported on the west coast. Rayon is made in scattered plants. Rayon products are clearly bunched in the industrial areas. The latter frequently owe their location to historical factors, for in many instances the making of rayon cloth has come into plants originally built for the manufacture of cotton but abandoned for the latter purpose when the cotton industry migrated from New England to the southern piedmont. Most types of textiles must be dyed and finished before being made into garments. Map A–22 shows the location of dyeing and finishing plants adjacent to the centers of production of the various types of textiles. In addition, a scattering of finishing plants is to be found outside of the main areas of textile production and closer to the next stage of fabrication—the clothing manufacture.

Yarns of all types, in addition to being woven into textiles and made into garments, are knit into stockings, jerseys, sweaters, etc. The distribution of knit goods, map A–24, follows roughly that of the cotton and silk industries with a combination of a northern center and a southern center. The northern center for the cotton textile industry is in New England whereas that of the knit-goods industry is in the Philadelphia area. The southern location of knit goods is less concentrated in North Carolina and somewhat more concentrated in eastern Tennessee. In the latter respect it reflects a later migration from north to south reaching the piedmont area after the latter had become an industrial center and moving into the eastern Tennessee section which had been relatively undeveloped industrially.

*Iron and steel.*—Maps A–29 to A–40 are further illustrations of the distribution of later stages of steel fabrication on the line of flow from resources to consumers and of the concentration in the northeastern industrial area, especially in the Great Lakes region, of industries manufacturing steel products.

*Forest products.*—For the most part, the fabrication of forest products is carried on in relatively small scale establishments whose distribution clearly reflects the line of flow. The production of lumber and timber products indicated on map A–41 shows a wide distribution of this activity wherever timber resources are to be found. The impression created by this map, however, needs to be corrected by consideration of the numbers employed and the actual amount of timber produced in the respective localities. Although the northeastern and the north Michigan and Wisconsin areas show a large number of establishments, they represent a very slight proportion of the employment or the product. The widely distributed lumbering activity shown in the South is somewhat more extensive in terms of the volume of employment than that reflected in the Pacific Northwest. In terms of employment, the Southern industry employed approximately 43 percent and the west coast 30 percent as against 5.5 percent in Michigan and Wisconsin and 2.8 percent in New England and New York. In terms of product the west coast produced 40.5 percent, the South 37.6 percent, while the Michigan-Wisconsin area produced only 3.6 percent and New England and New York 2.8 percent.

Since lumber is one of the products which loses most bulk in its first stages of fabrication, it is natural to find the lumber mills located close to the lumber resource. The next stage, planing mills, map A–42, is found to some extent in the vicinity of lumber mills but more generally in proximity to the two main uses of lumber, the industries using wood products and particularly the construction industry located in centers of population. A satisfactory basis for mapping the construction industry was not available. This series for forest products is, therefore, very incomplete, by reason of the omission of the main lumber-using industry.

Whereas planing mills, insofar as they are located at a distance from the resources and from the first stage of fabrication, are primarily located with reference to the construction industry, the fabrication of furniture follows a pattern of its own. Map A–43 shows this pattern. The industry here mapped is in part two industries, one using wood, the other metal, but since wood furniture comprises more than three-quarters of the total volume, the main characteristics shown in the map are determined by this branch of the industry. It is scattered extensively through the industrial States of Illinois, Indiana, and Ohio. More recently a new center has been developed in the southern piedmont, until at present North Carolina is second in the number of persons employed in the industry. The plants scattered through the South, Middle West, and New England largely represent small enterprises manufacturing for a local custom market.

The most bulky wood products and those which are therefore fabricated close to their ultimate use are wooden boxes. Their manufacture shown in map A–44 reflects the combination of agricultural demand for boxes for shipping of fruit, vegetables, etc., and the demands of small scale industries such as that which is represented in the New England area. Of the total employment in the industry nearly a quarter is accounted for by the three fruit shipping States of California, Florida, and Georgia.

Maps A–45 to A–48 supplement chapter IV, maps 33–36, pulp, paper, and printing, with industries that are auxiliary to printing and publishing and with a still later stage of paper fabrication, one in which scrap paper constitutes a substantial part of the raw material.

*Petroleum.*—Production, transportation, and refining of petroleum are shown in maps A–49 to A–52. Refining largely follows the location of wells, but is also located in New Jersey and eastern Pennsylvania near centers of population. The direction of oil and gasoline trunk pipe lines clearly shows the flow from production centers to centers of consumption.

*Other natural resource industries.*—Maps A–53 to A–56 add other natural resource industries. Clay and stone products are typical of bulky and widely distributed resources fabricated locally for local or regional use. The glass industry, however, shows a high degree of localization, even though the raw material is fully as widely scattered as are clay and stone. Here a second resource, natural gas, which is extensively used in glass manufacture, contributes to the location of the industry.

*Miscellaneous industries.*—The remaining maps show industries which are typical of activity carried on in the industrial area. In no case is the industry closely attached to a localized resource. In the case of rubber and confectionery the raw materials are wholly or largely imported. Industries such as radio apparatus, refrigerators, and aircraft involve a high degree of fabrication of a wide variety of materials. Whereas these industries together account for only a small proportion of the employment in the industrial areas they constitute a representative sample of the type of industry which is footloose and tends to settle in industrialized areas. Where any particular degree of concentration in these products is shown as in the case of watches and rubber tires, for example, such concentration is largely a matter of historical accident followed by the investment of capital and the development of a skilled labor force. The last four maps, A–69 to A–72, make up a miscellaneous group.

A 1

TOTAL OATS (EXCLUDING OATS FOR HAY)
Acreage, 1929

Each dot represents 10 000 acres

A 2

BARLEY HARVESTED
Acreage, 1929

A 1

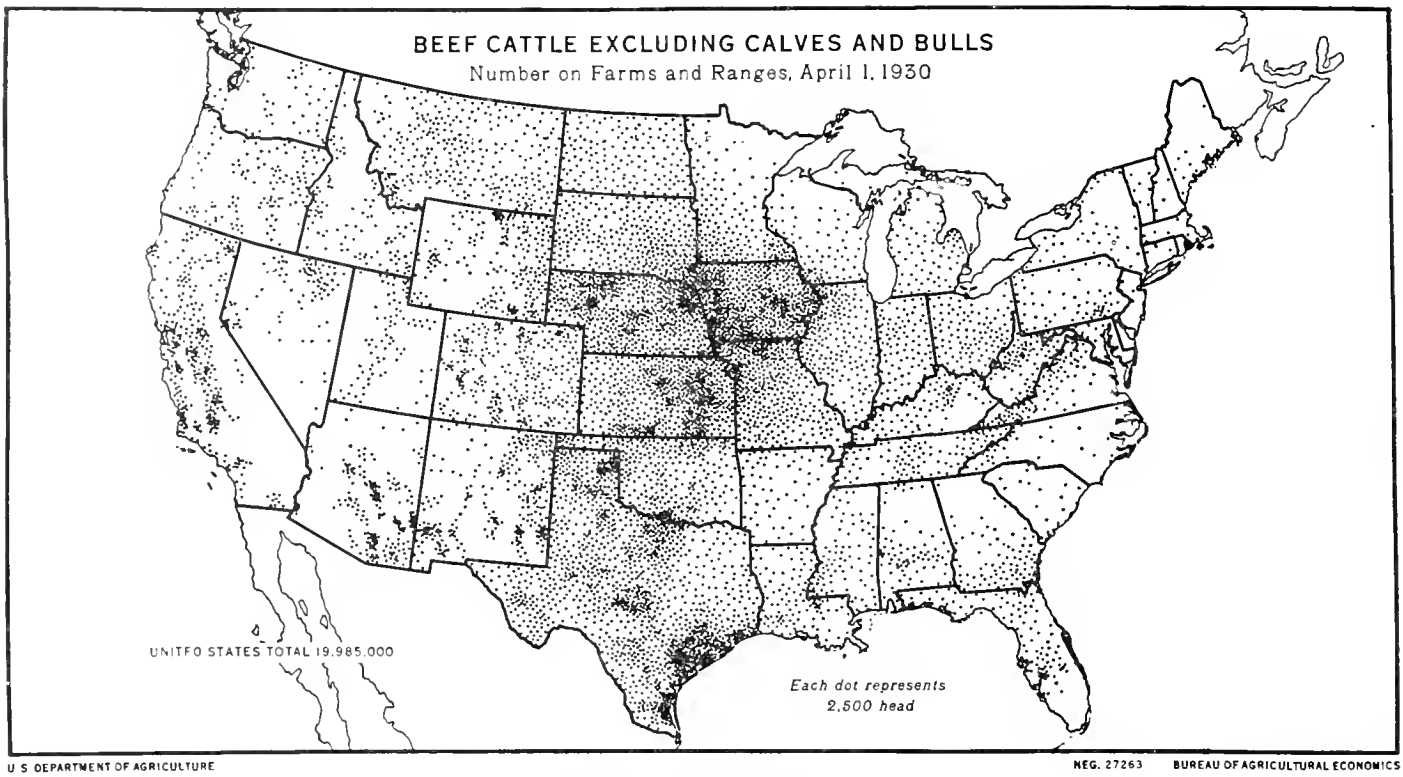
HAY
Acreage, 1924

A 3

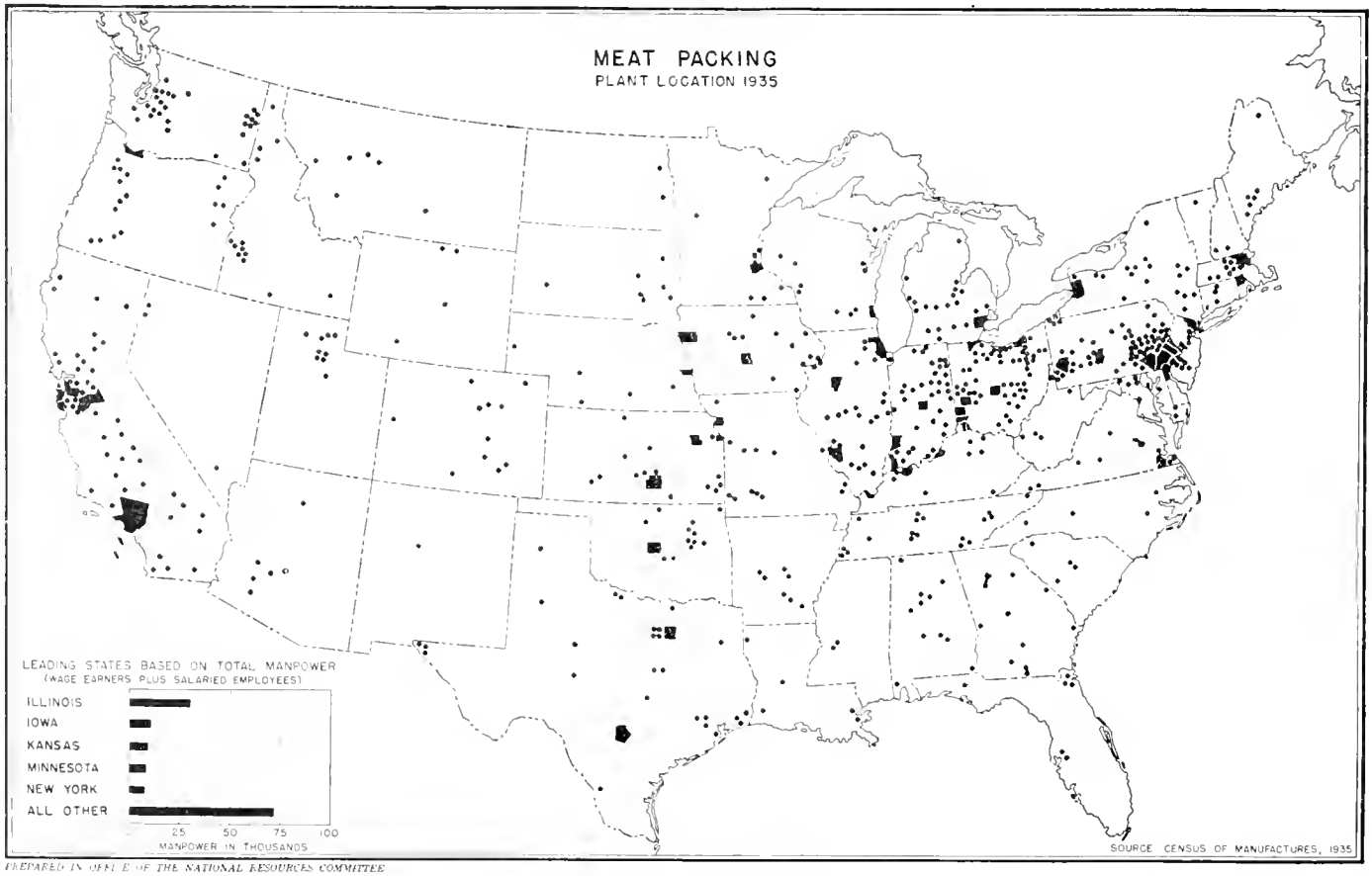
CHICKENS OVER THREE MONTHS OLD
Number, April 1, 1930

Each dot represents 40 000 head

A–5

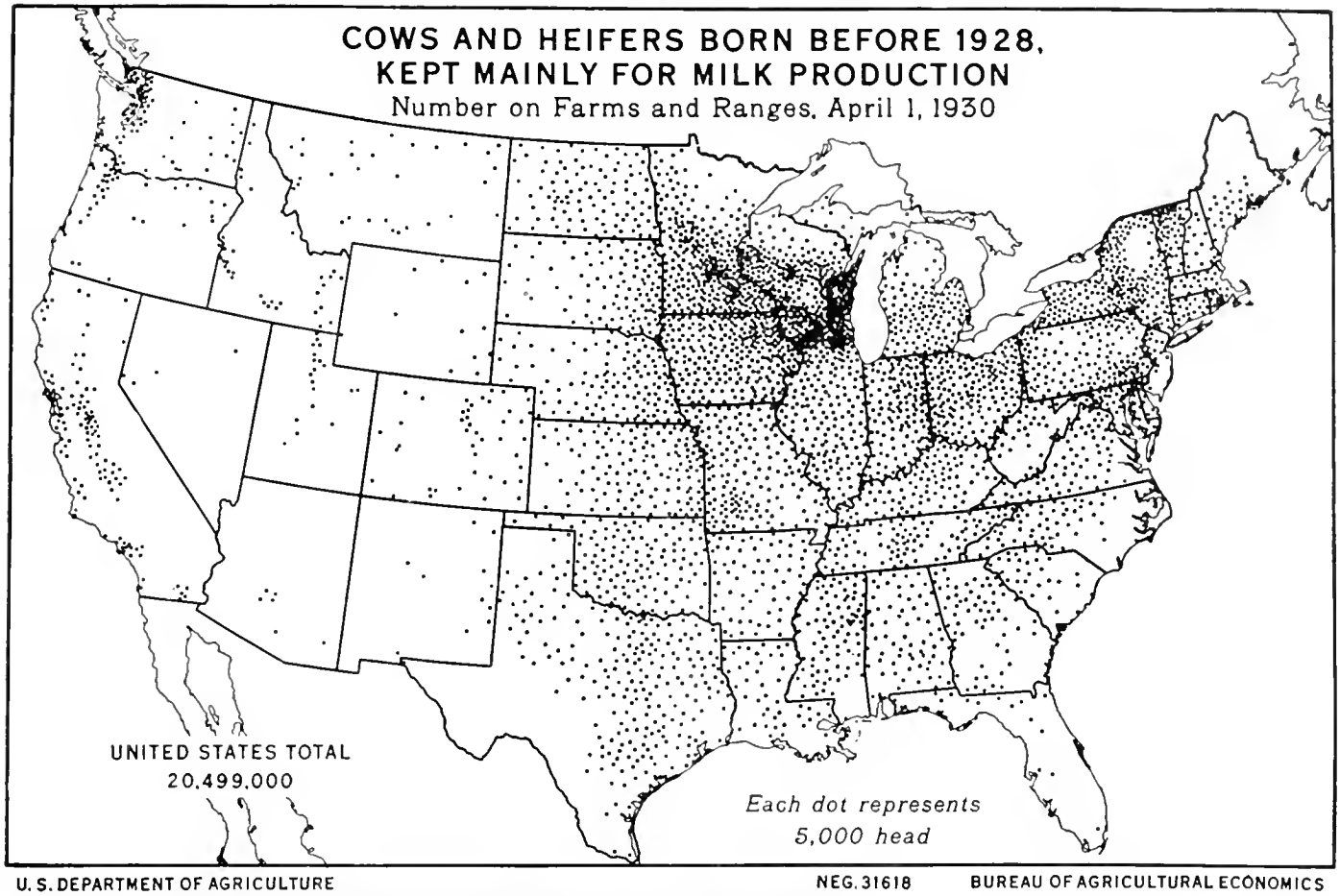



A–6




Retail Slaughter not included

A 7

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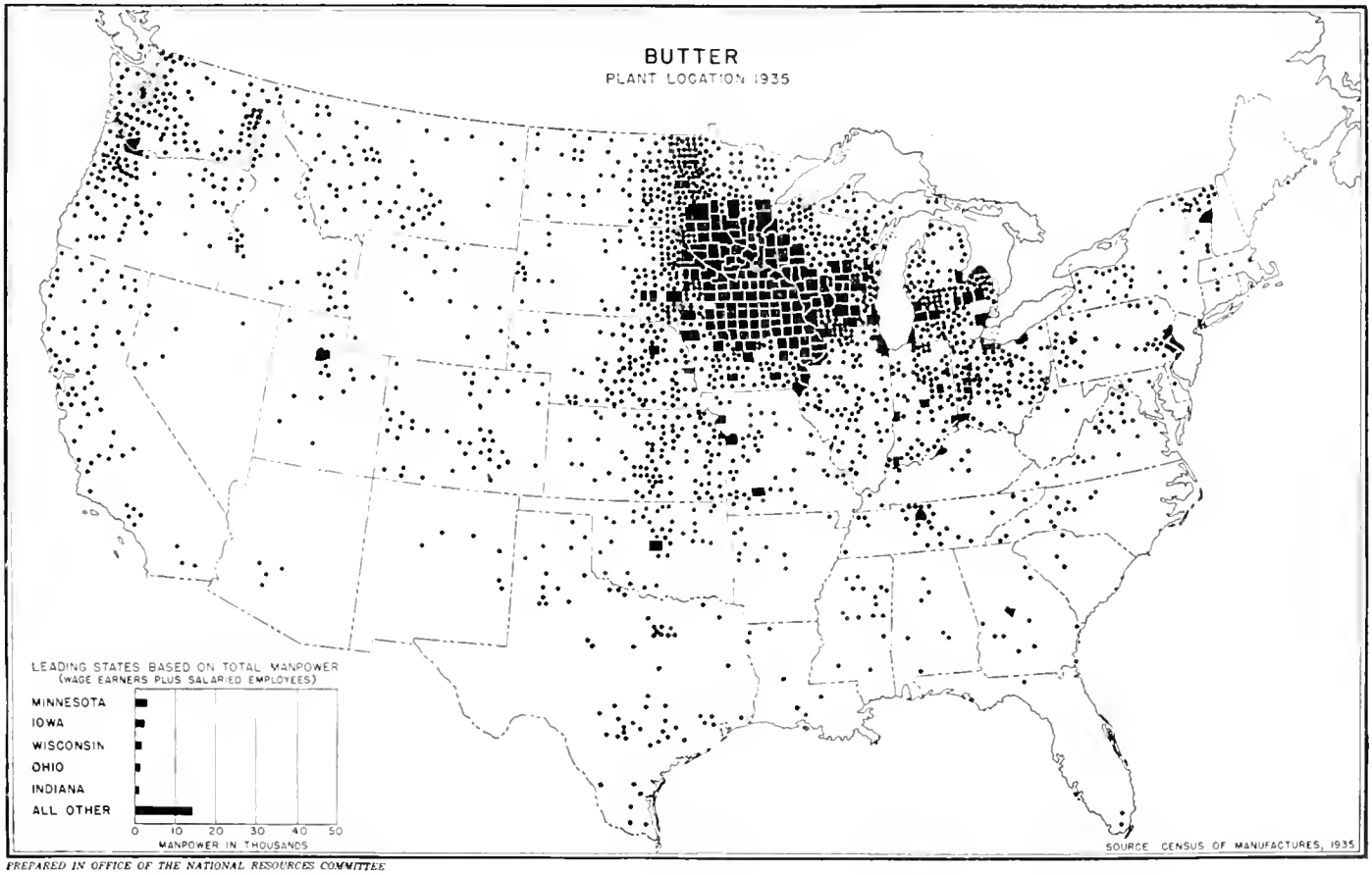


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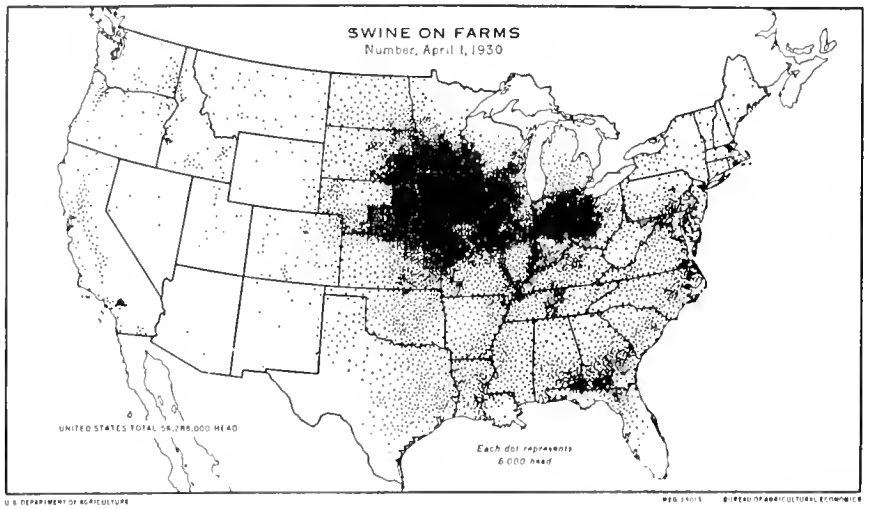
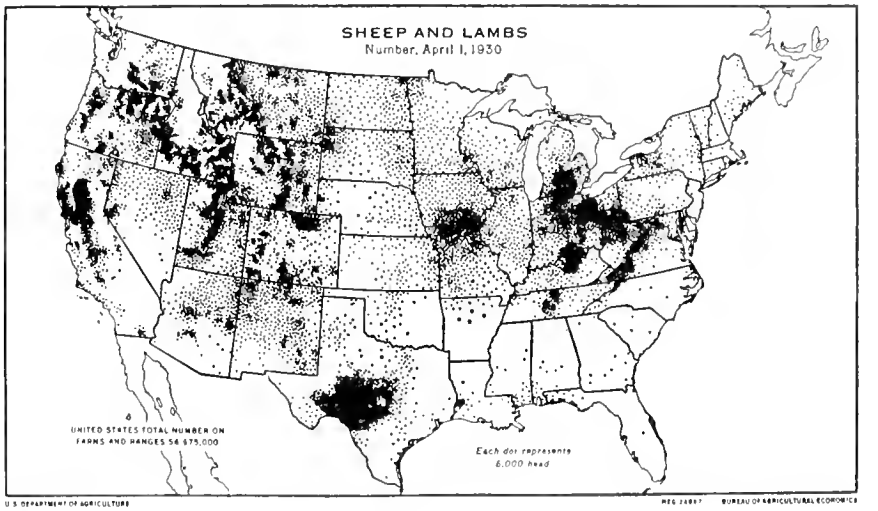
A-8

A-9




A-10

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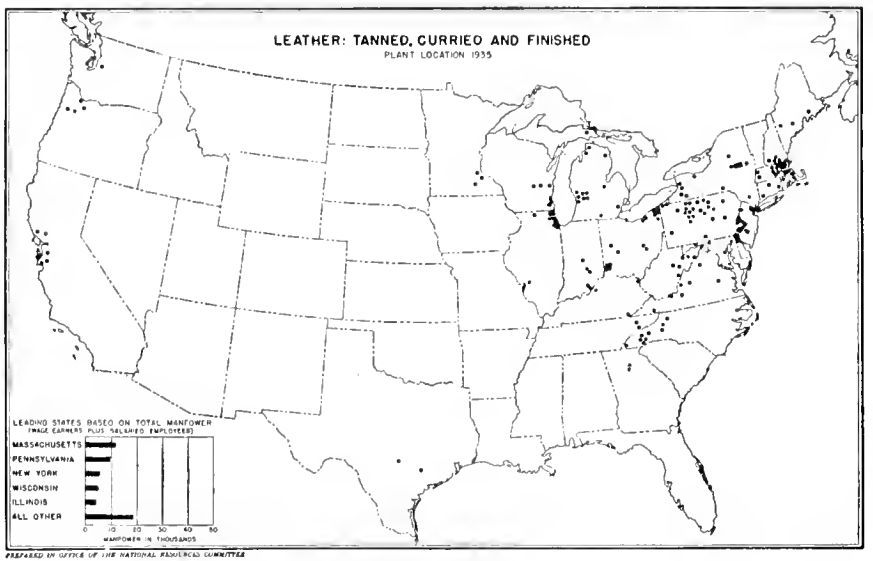
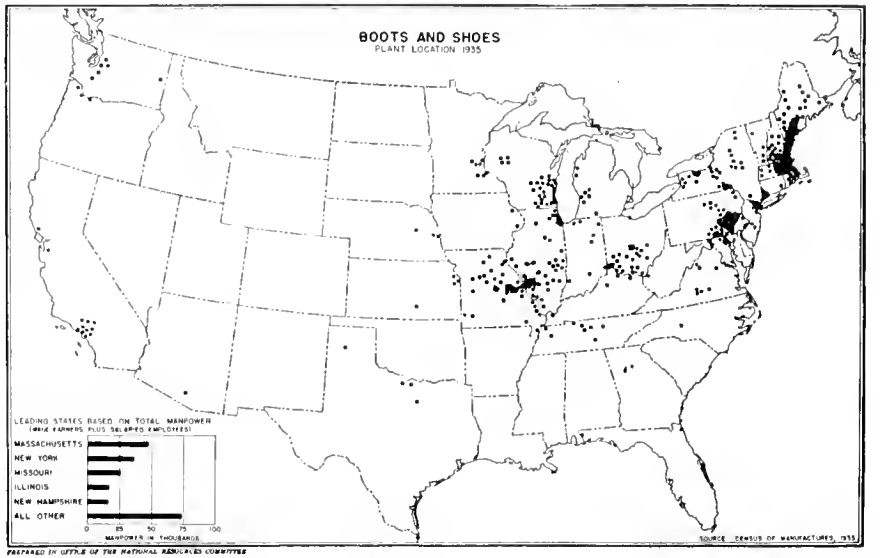



A-12



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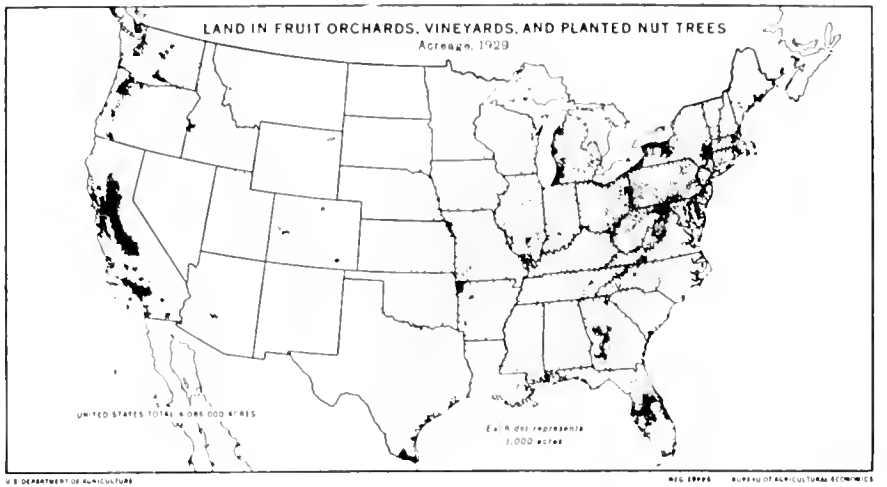


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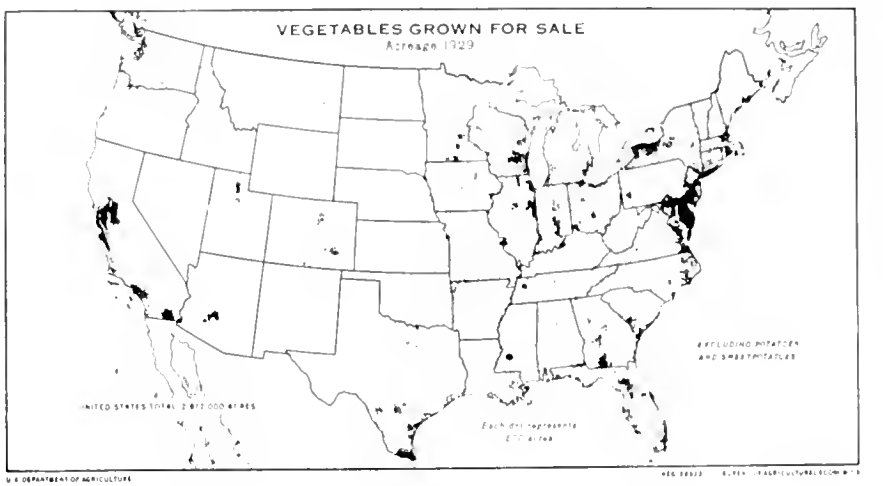
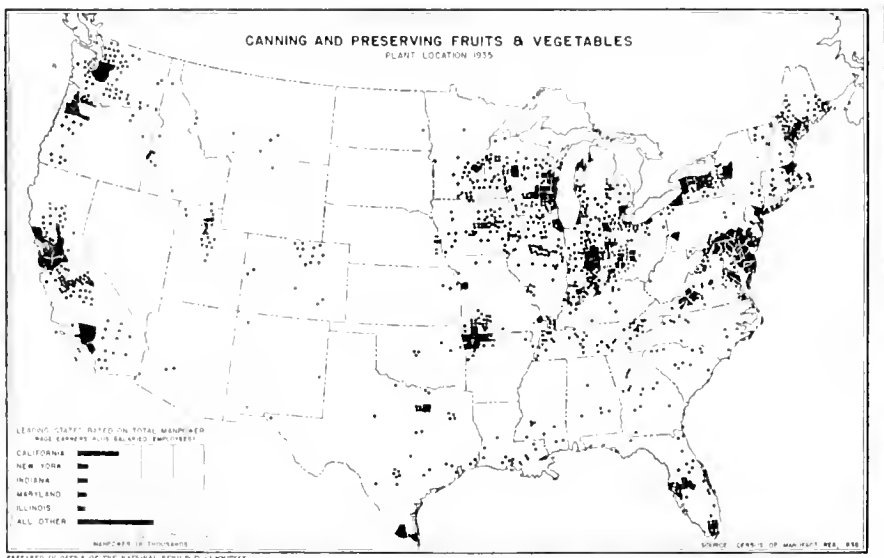
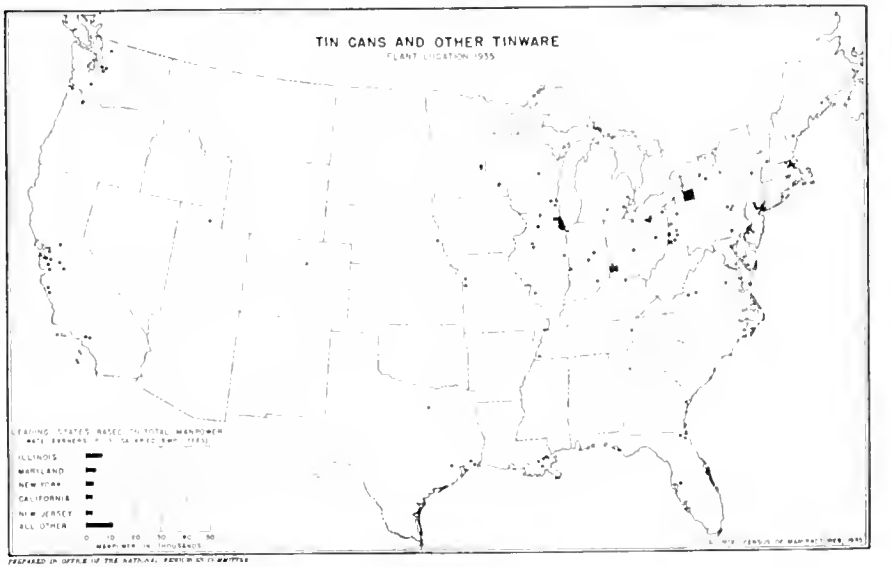


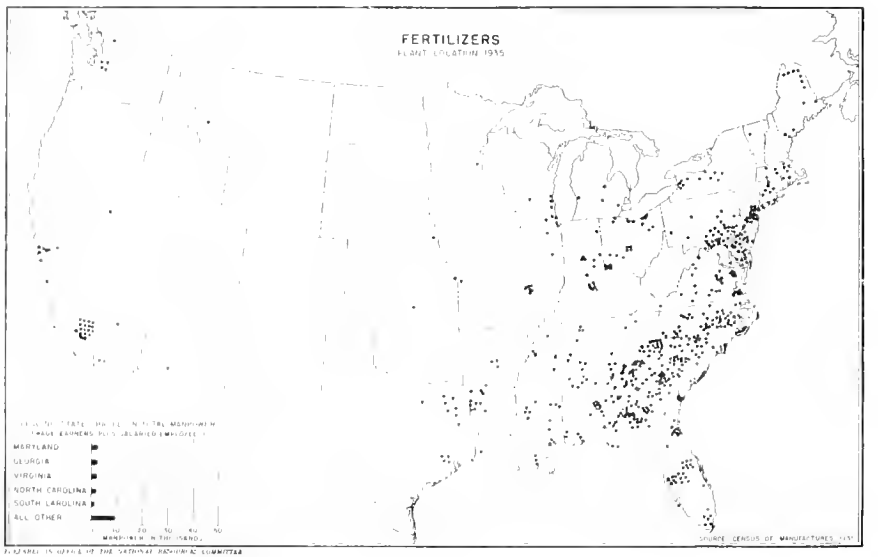

A-15




A-16



A–17

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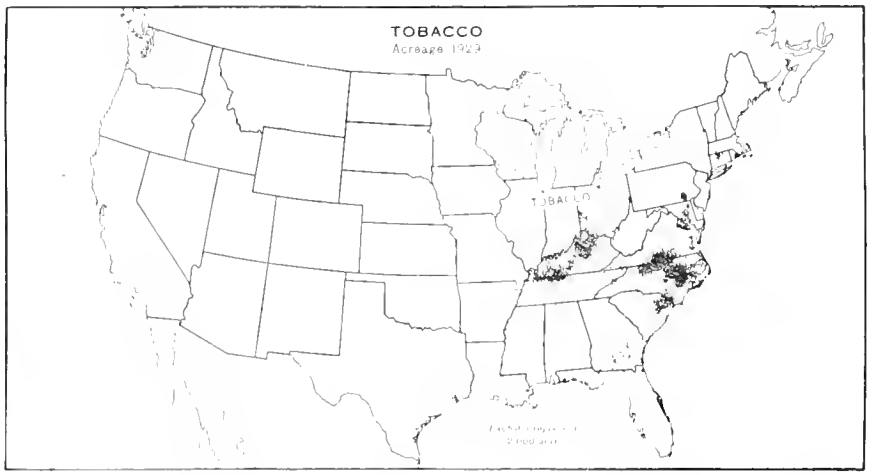
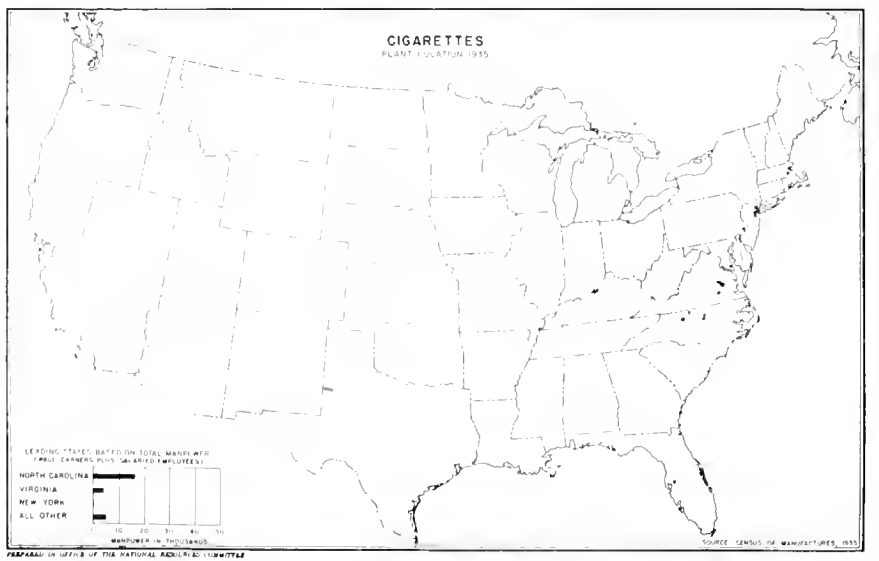
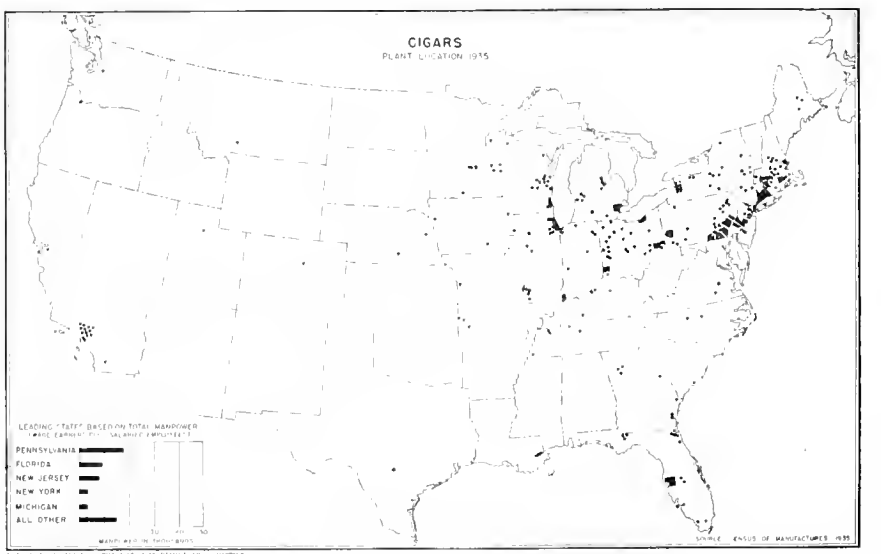



Source, Department of Agriculture

A–19

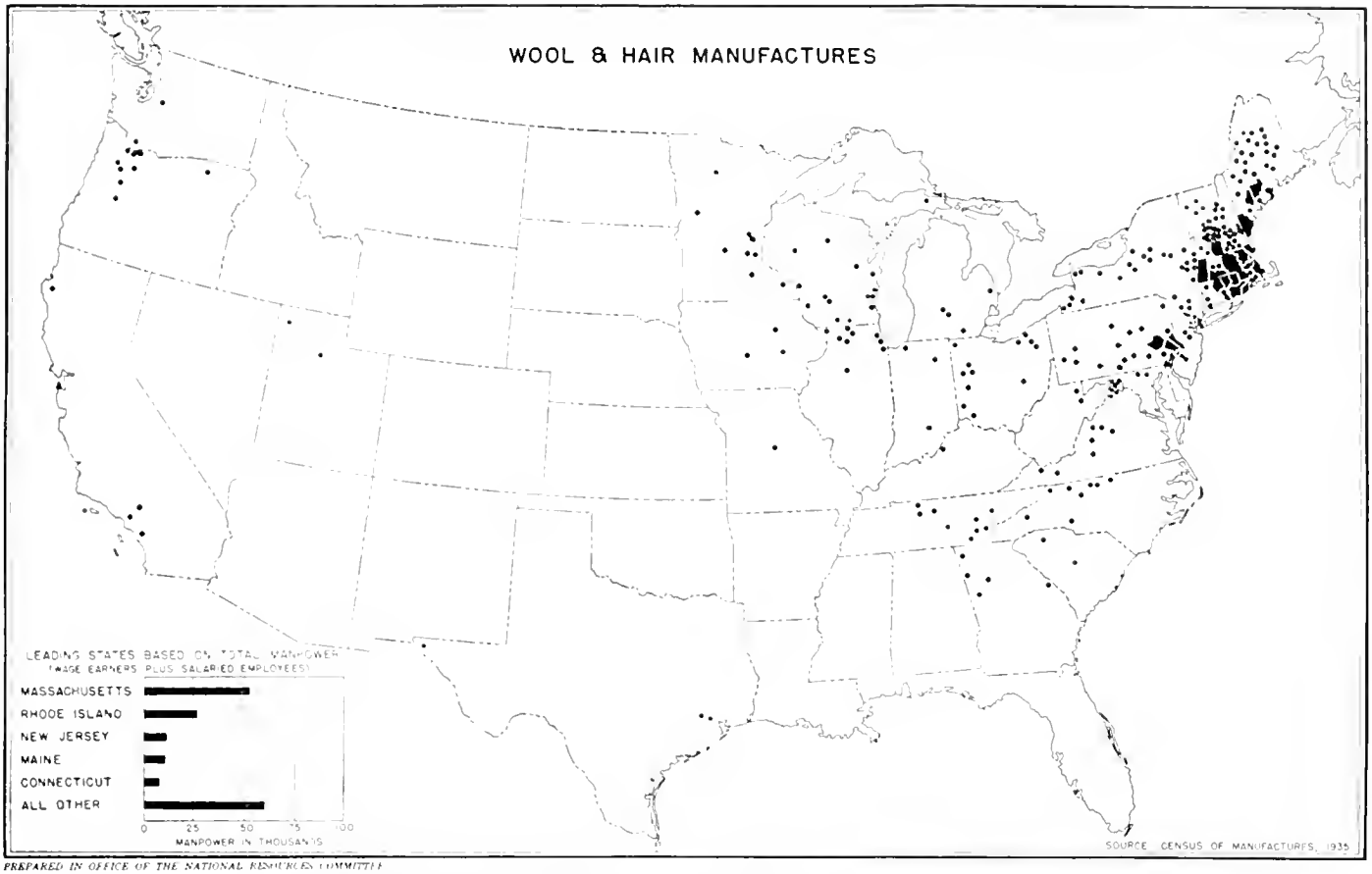



A–20




Plant Location 1935

A 21

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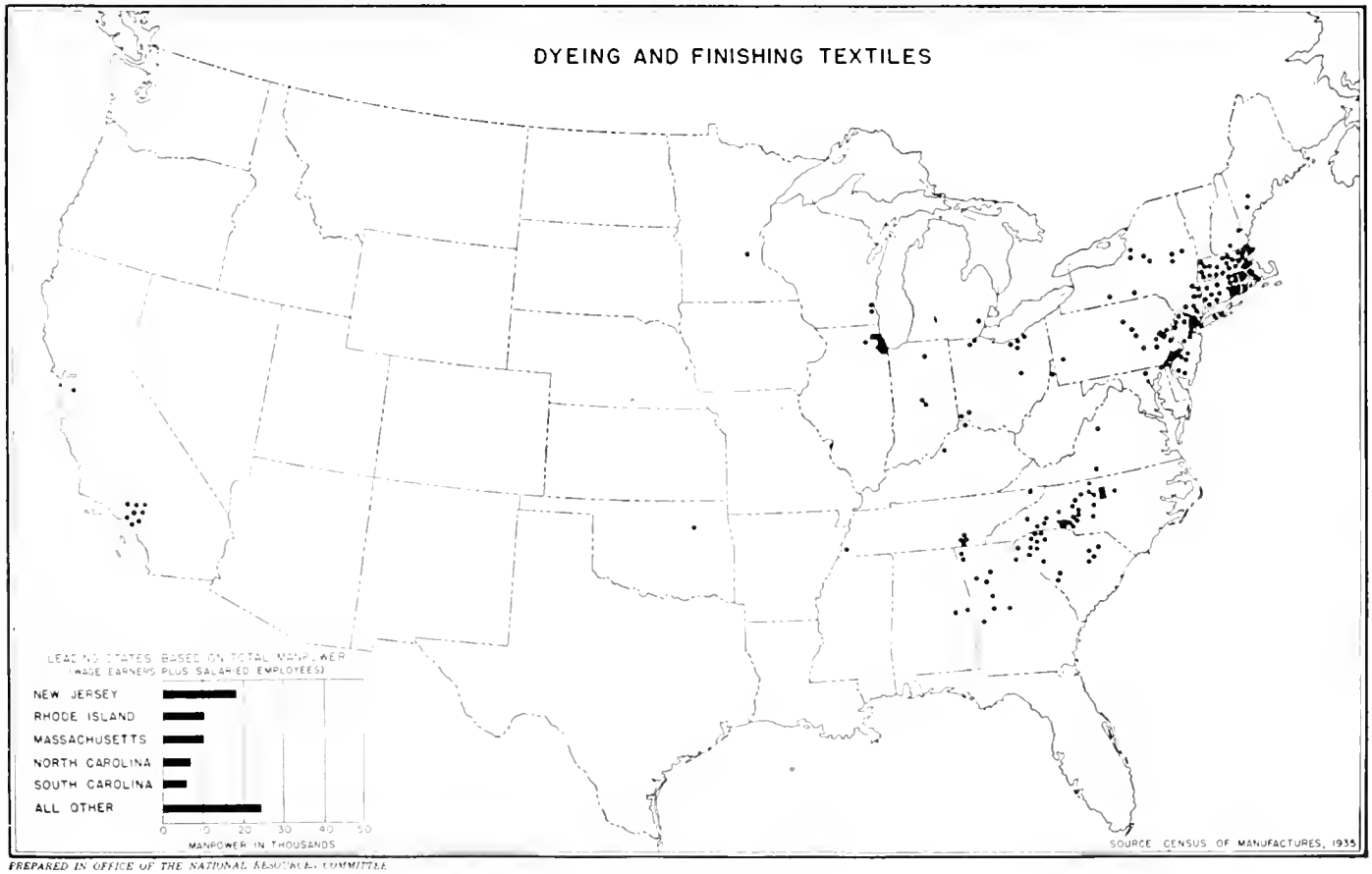


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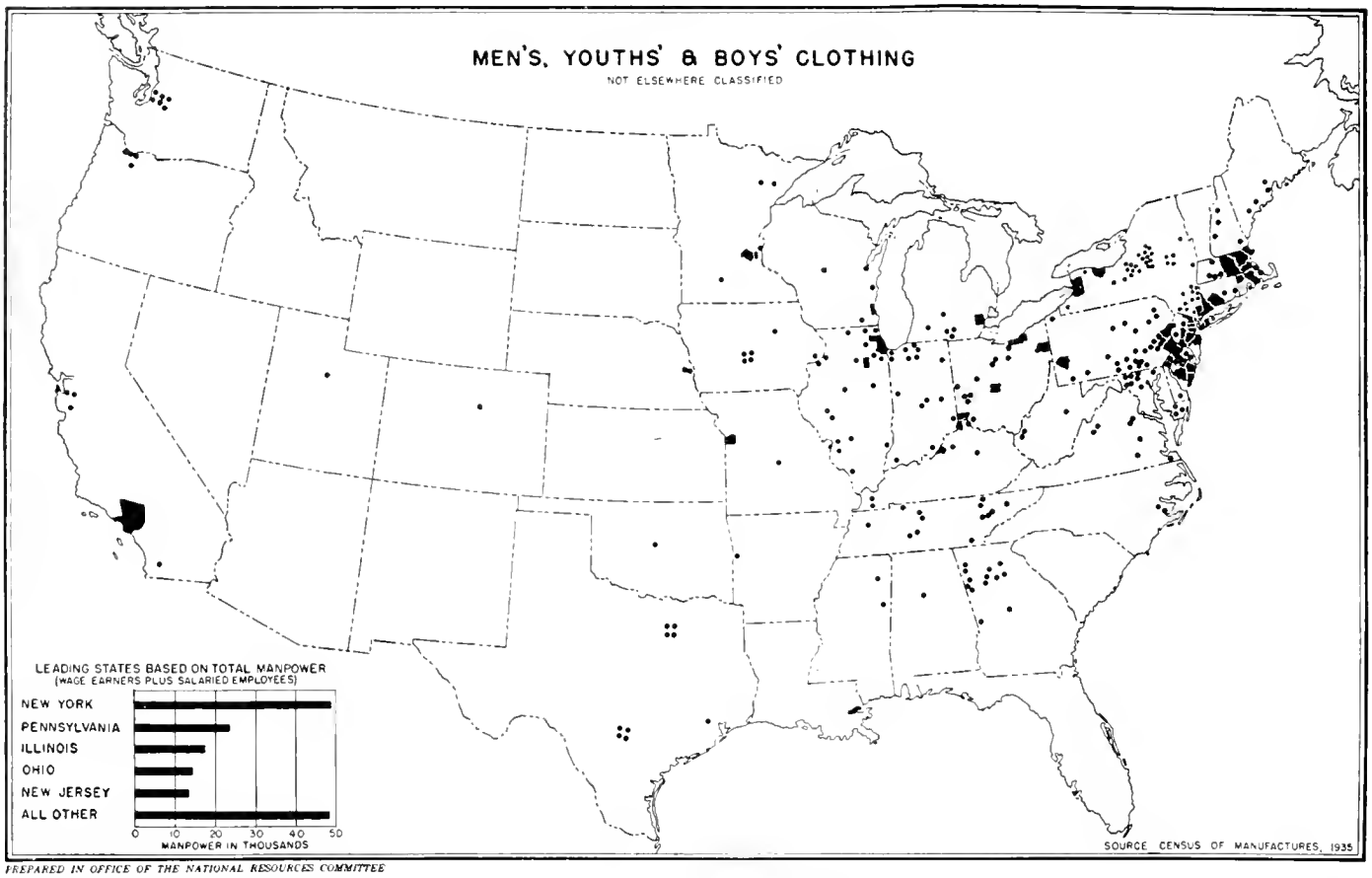
A–22
Plant Location 1935

A–23

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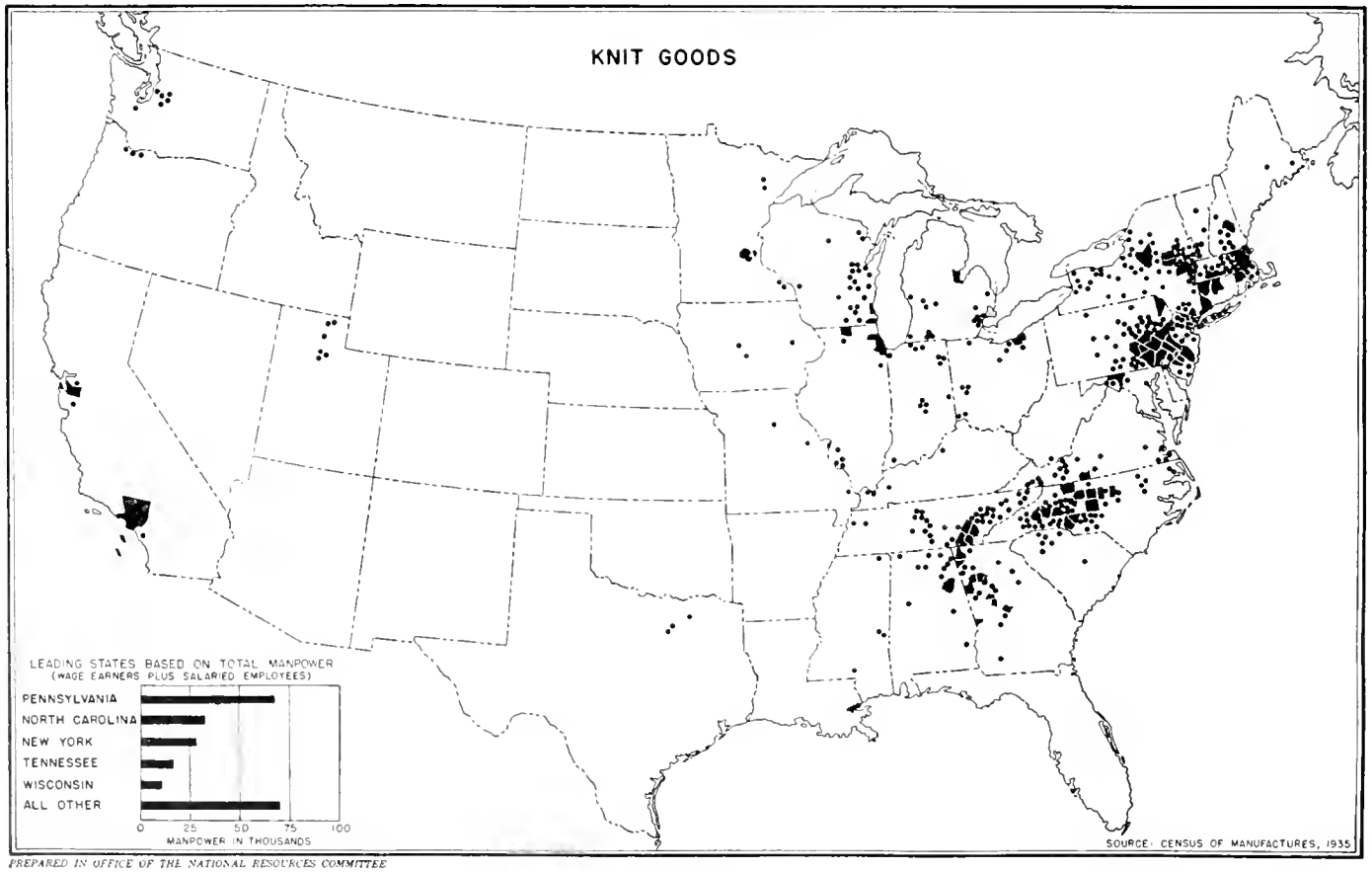


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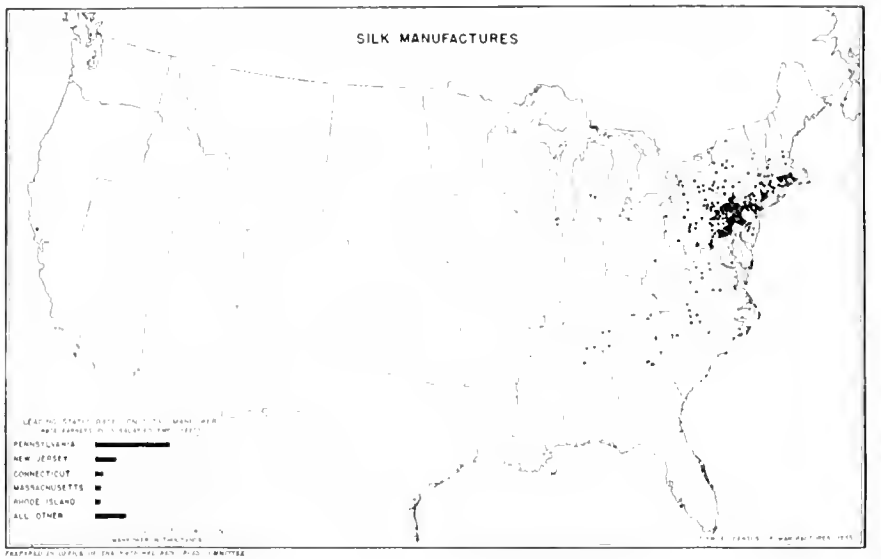
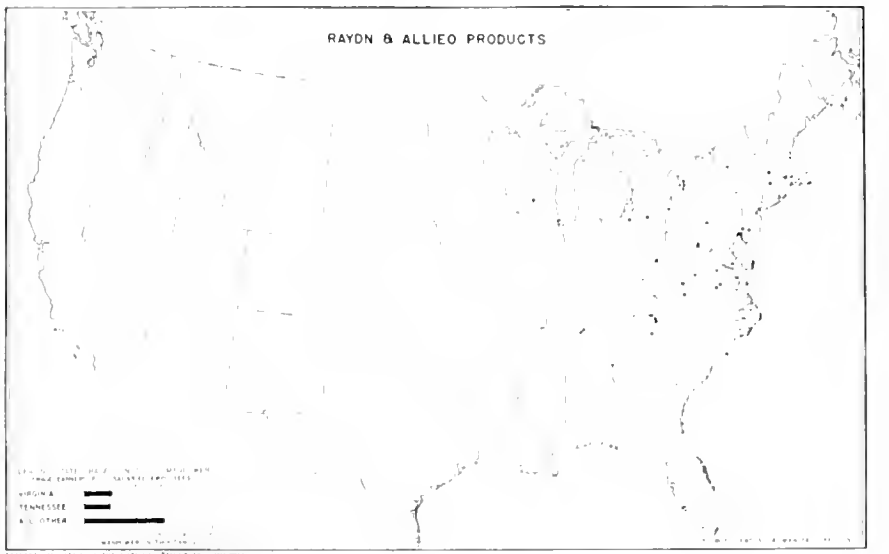
A–24

Plant Location 1935

A-25




A-26

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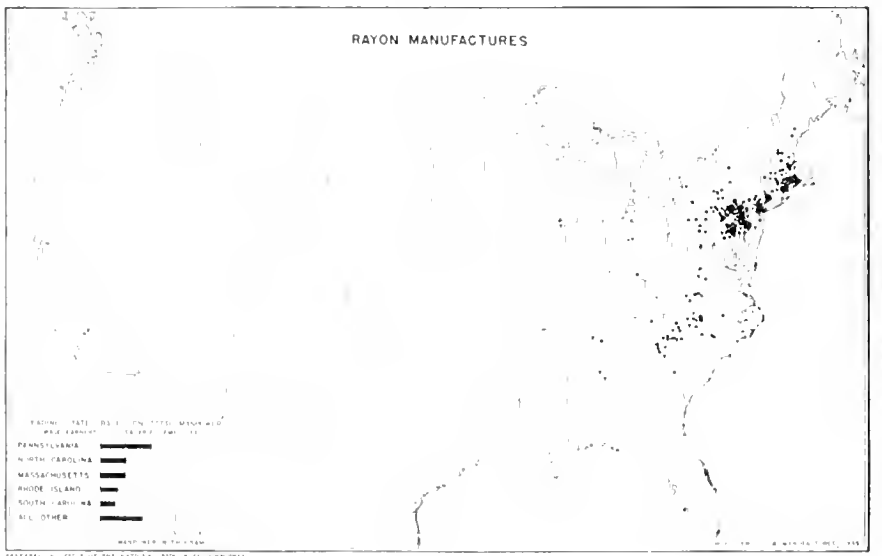
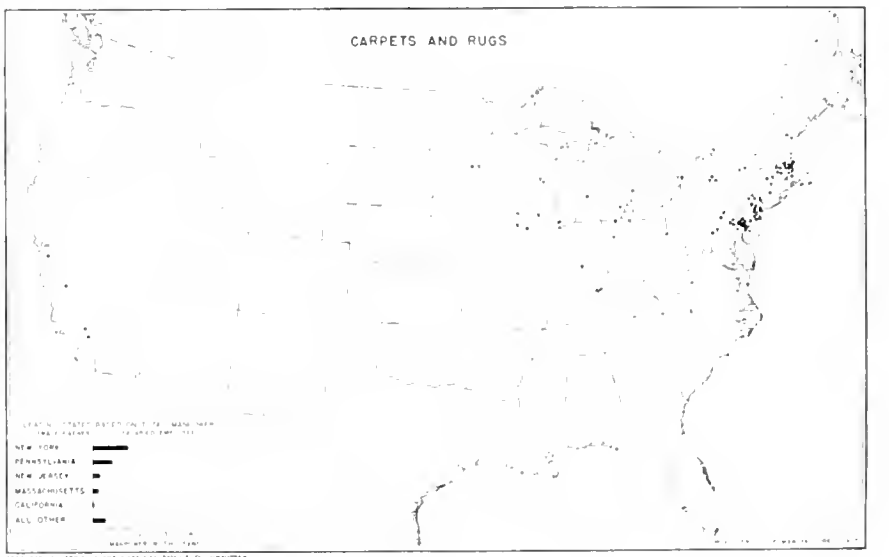
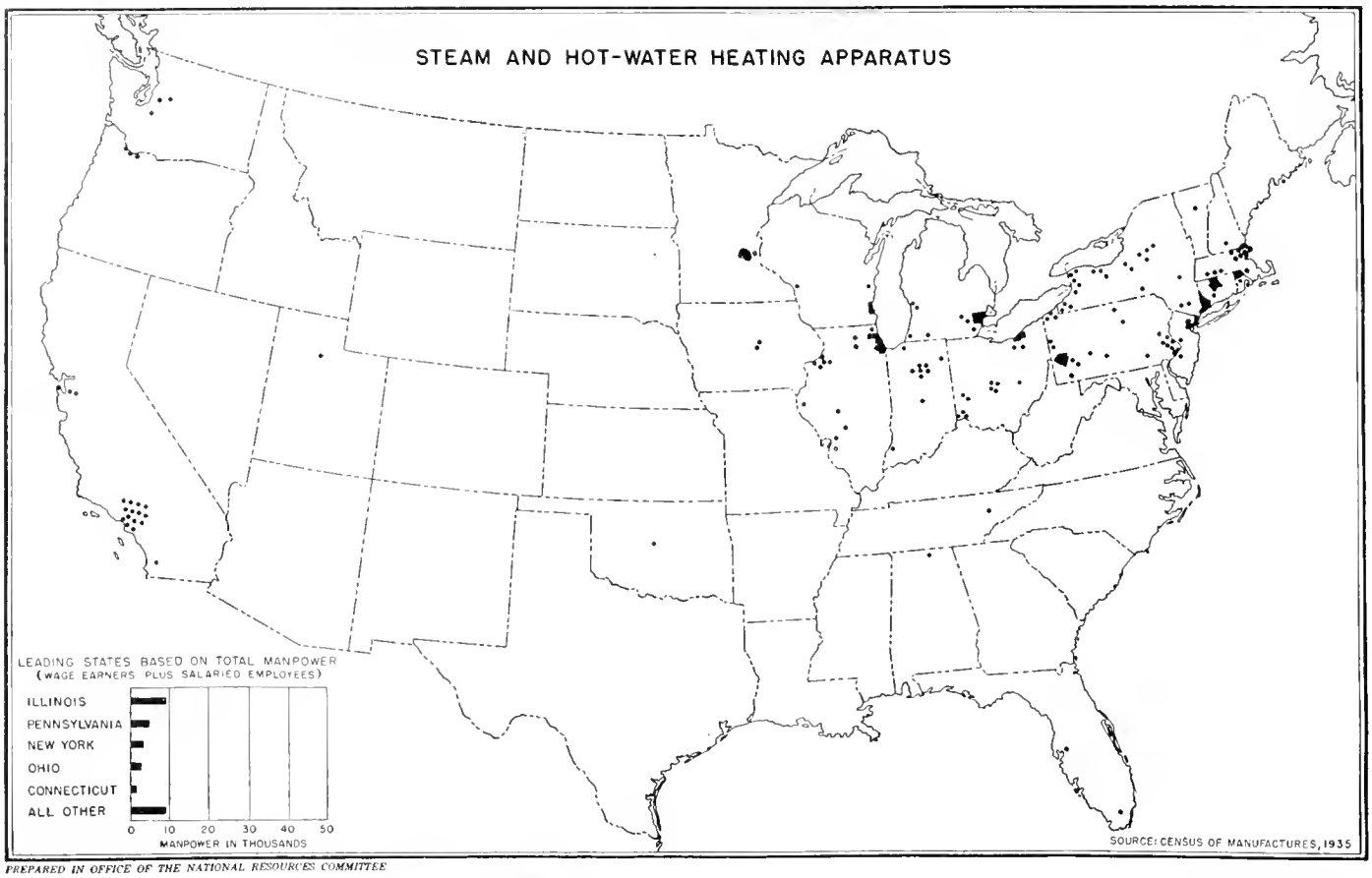



A-28




Plant Location 1935

A–29

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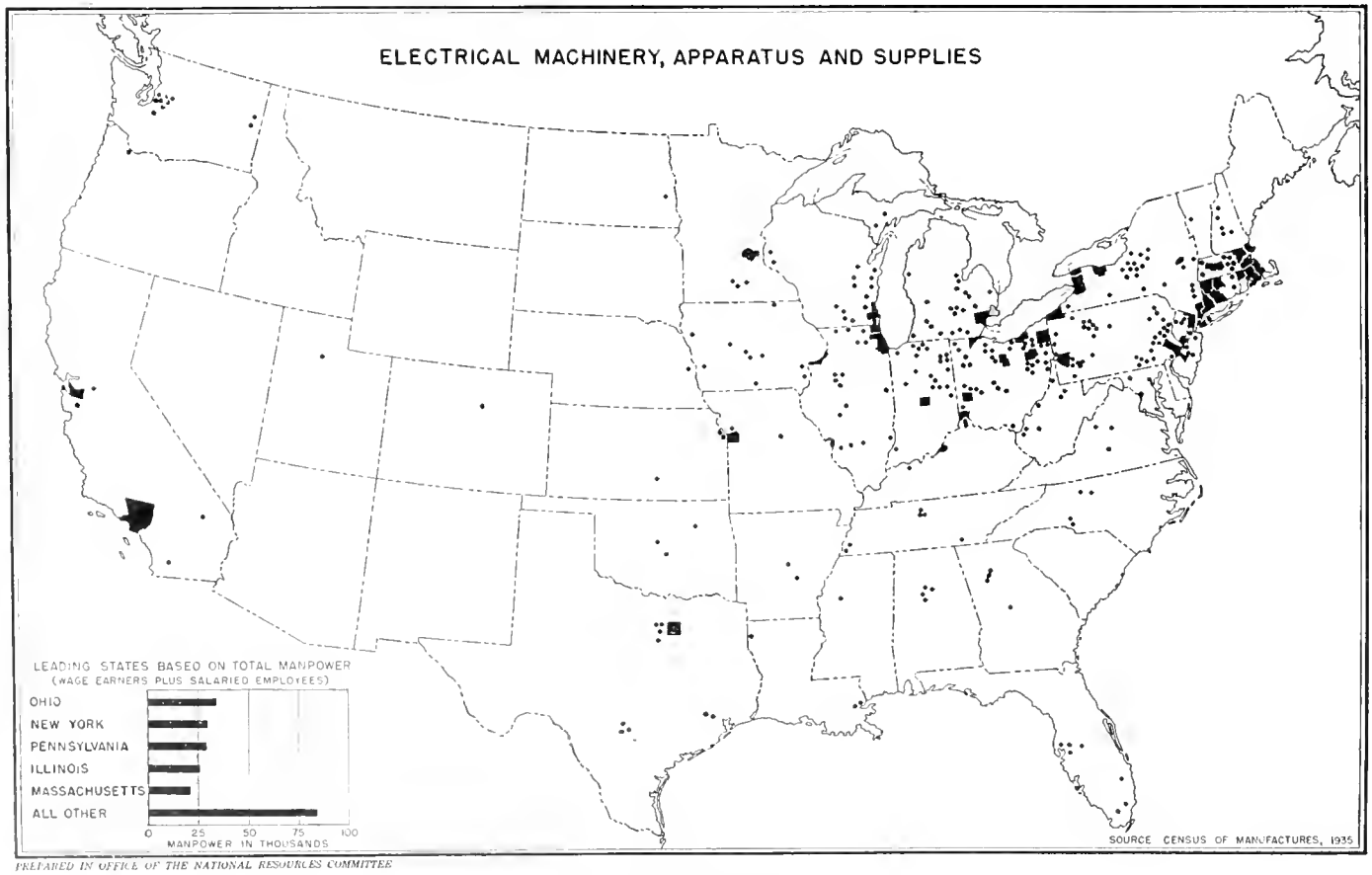


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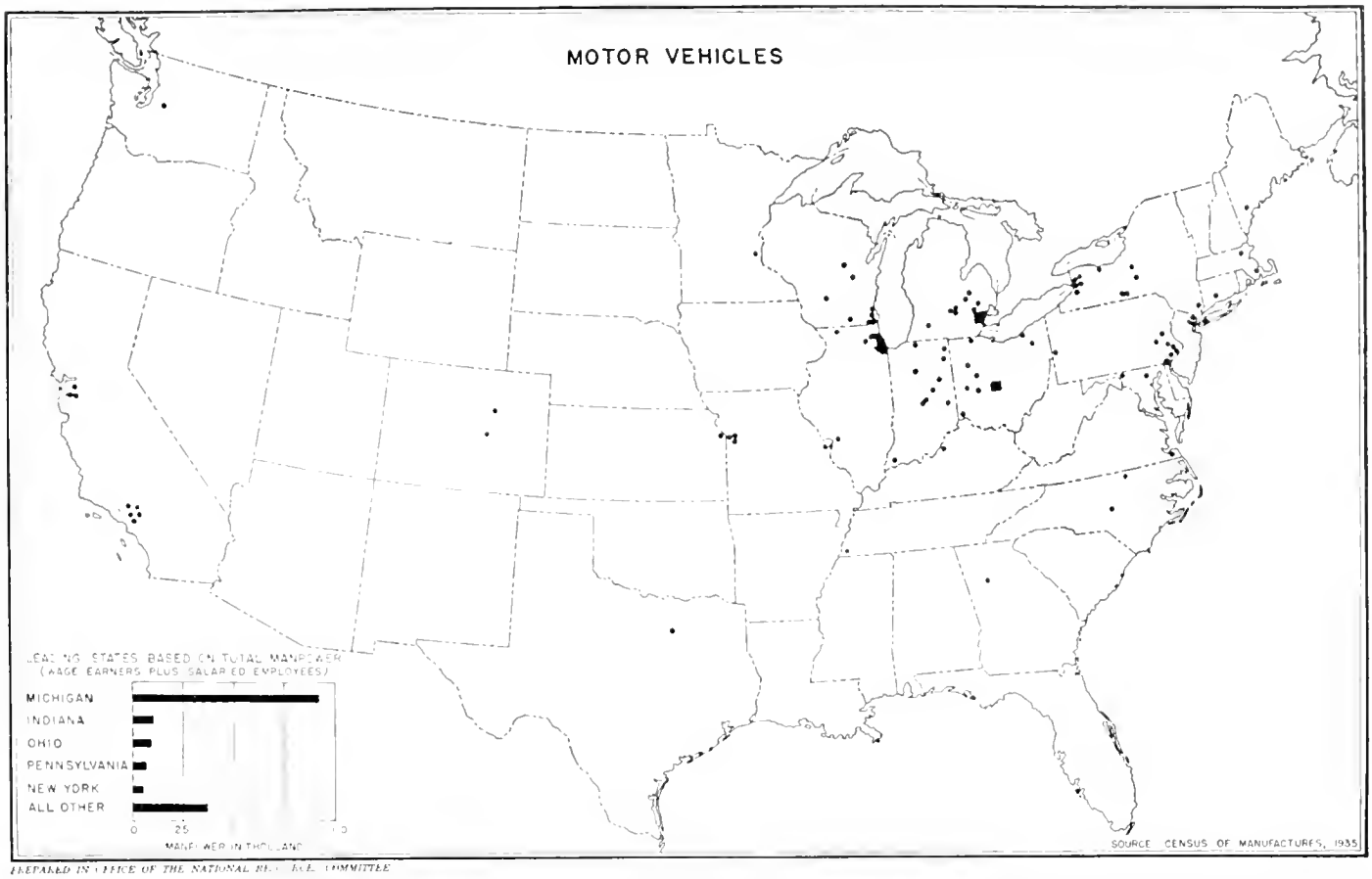
A–30
Plant Location 1935

A–31

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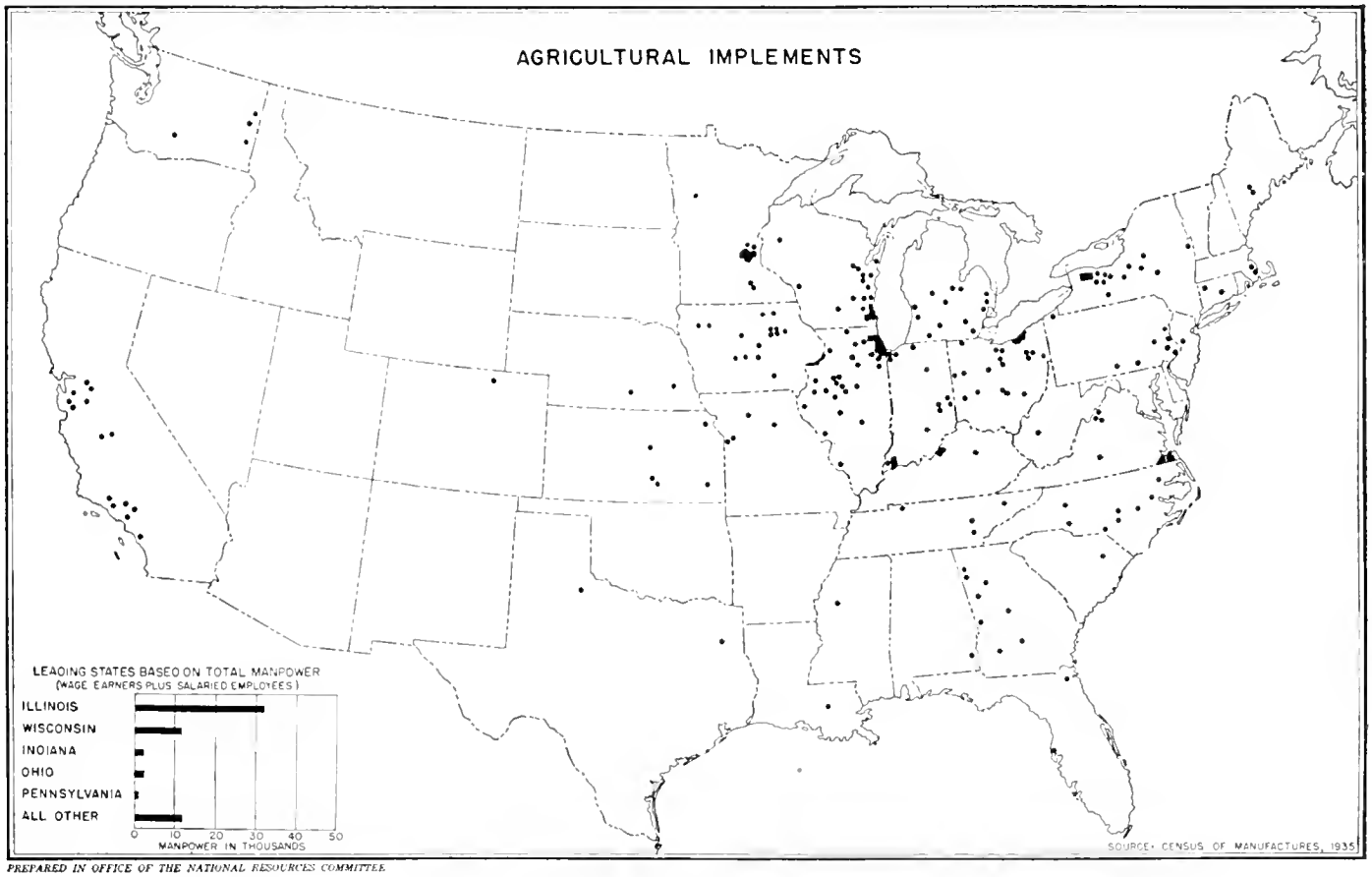


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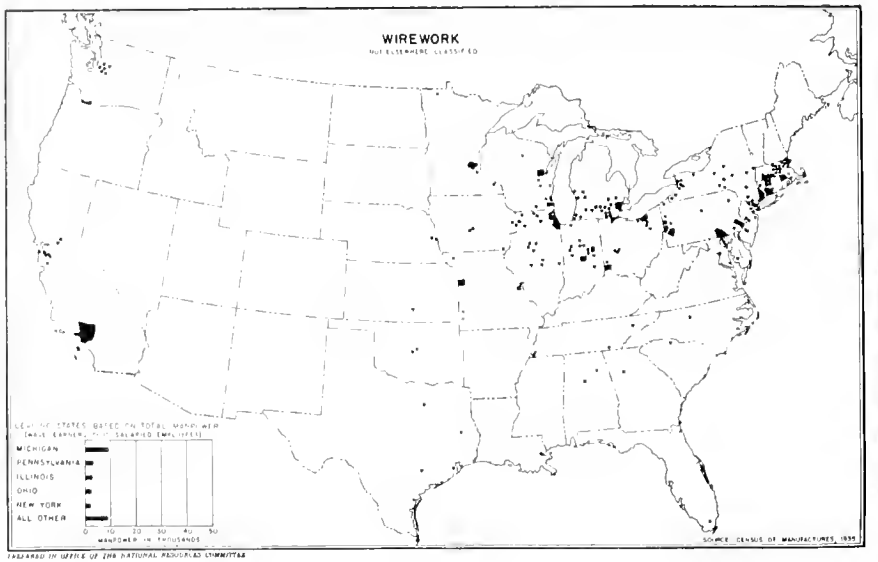
A–32

Plant Location 1935

A 33

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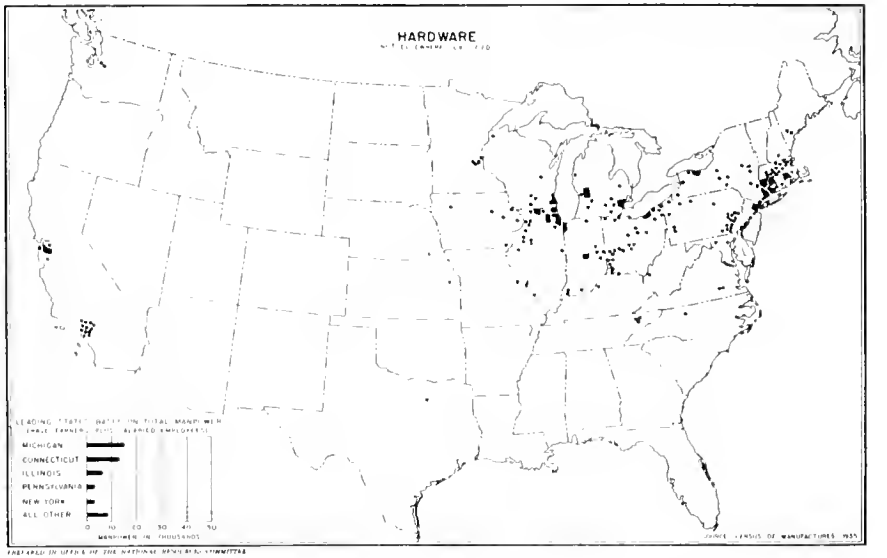
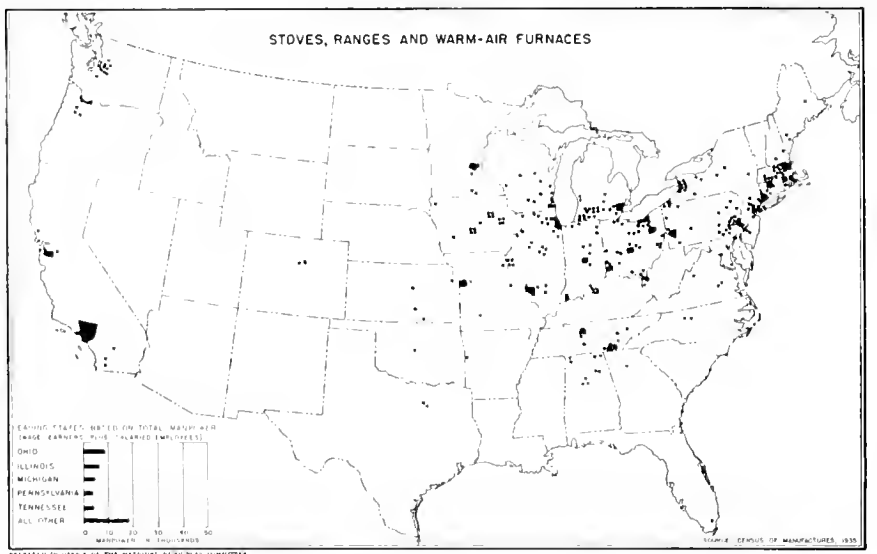
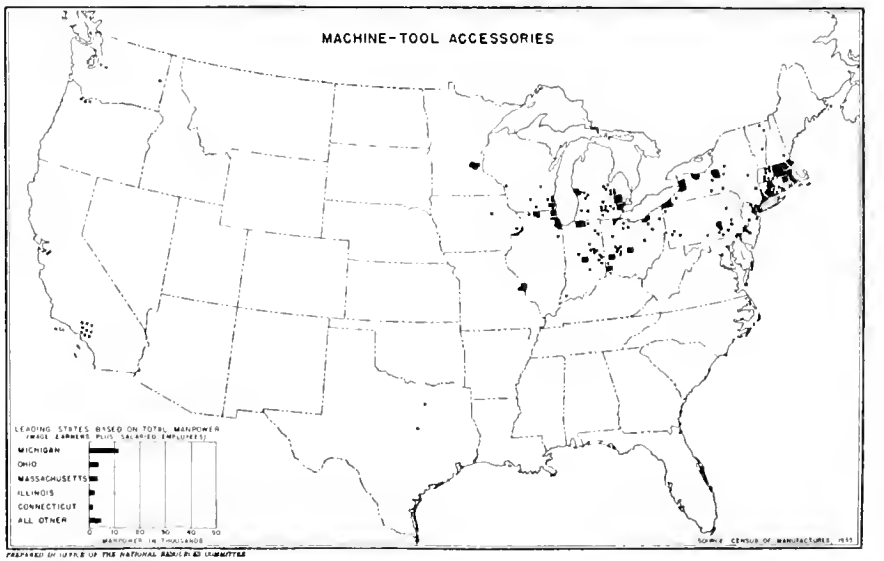



A–35

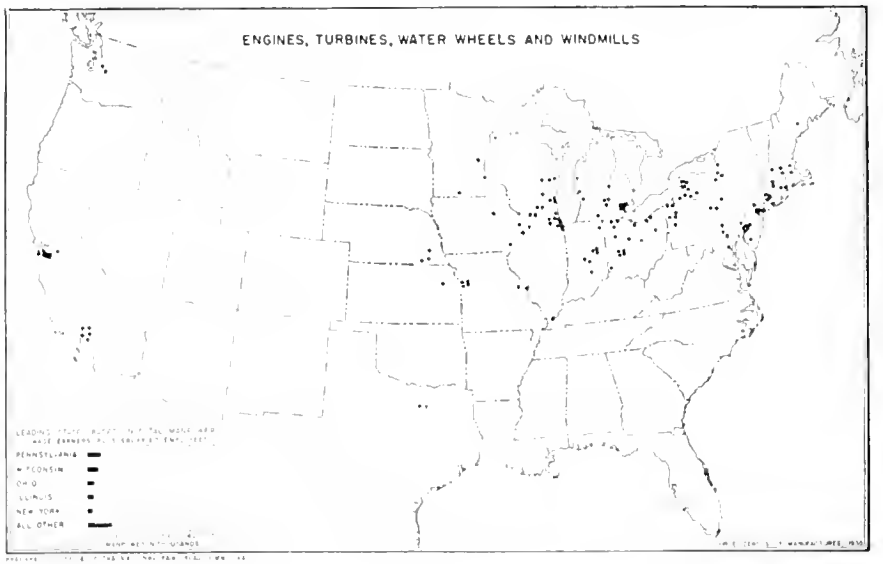



A–36

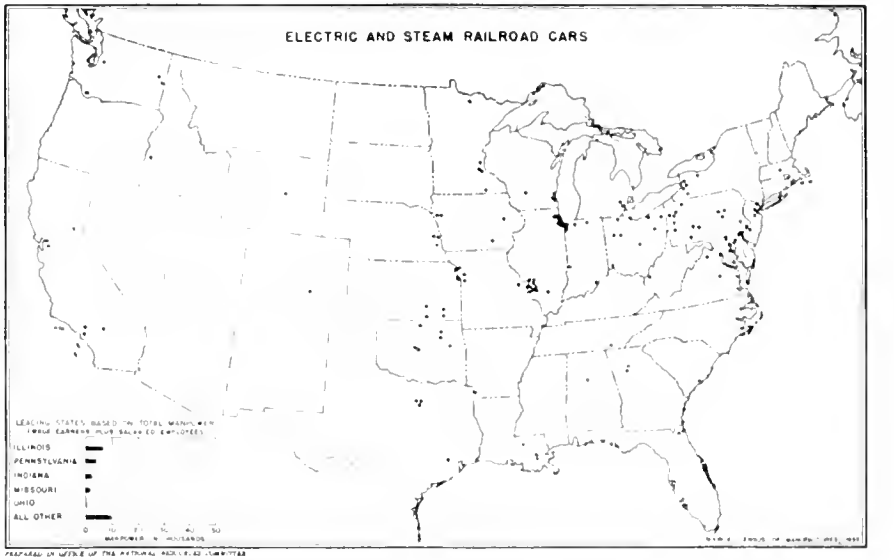



Plant Location 1935

A-37




A-38

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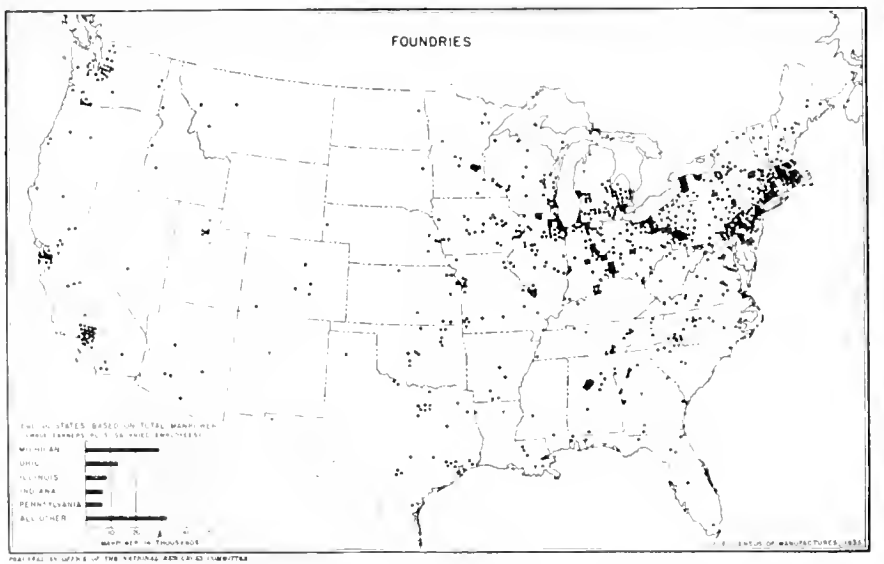
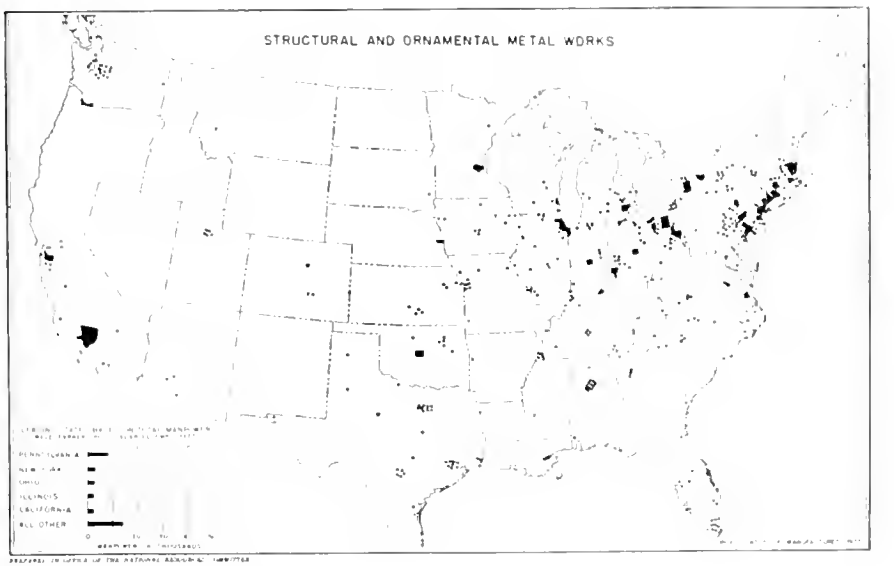
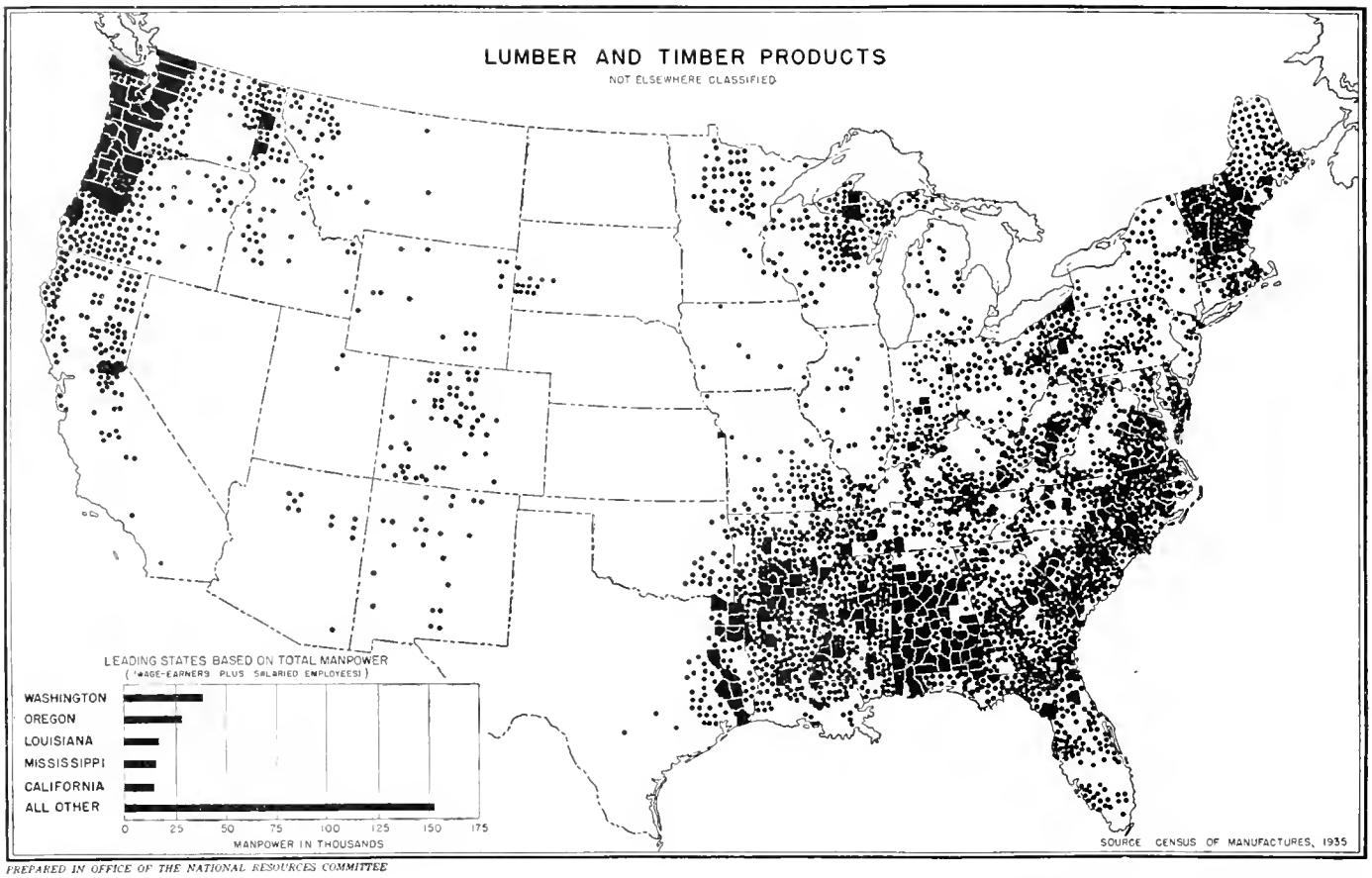



A-40




Plant Location 1935

A–41

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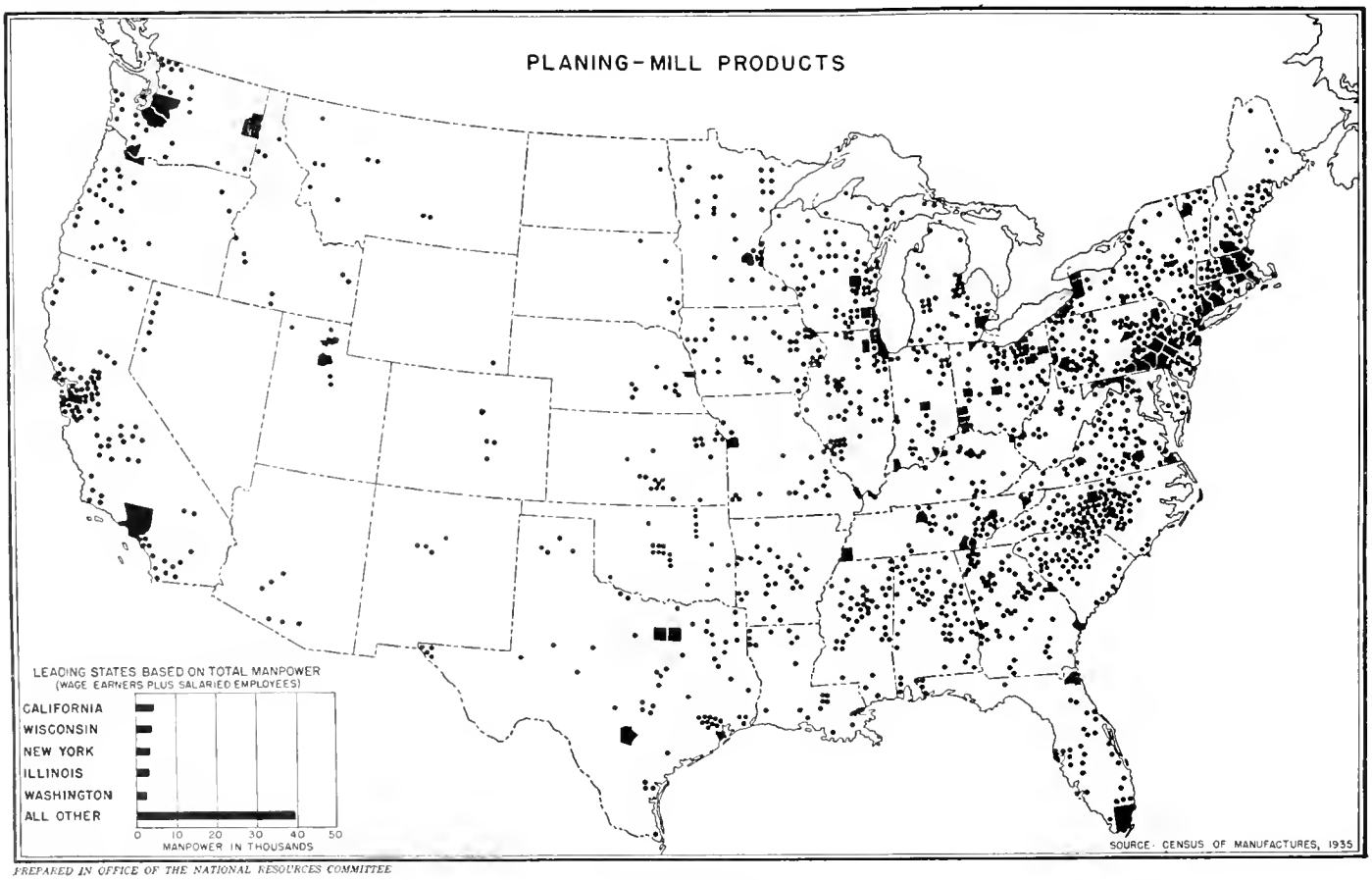


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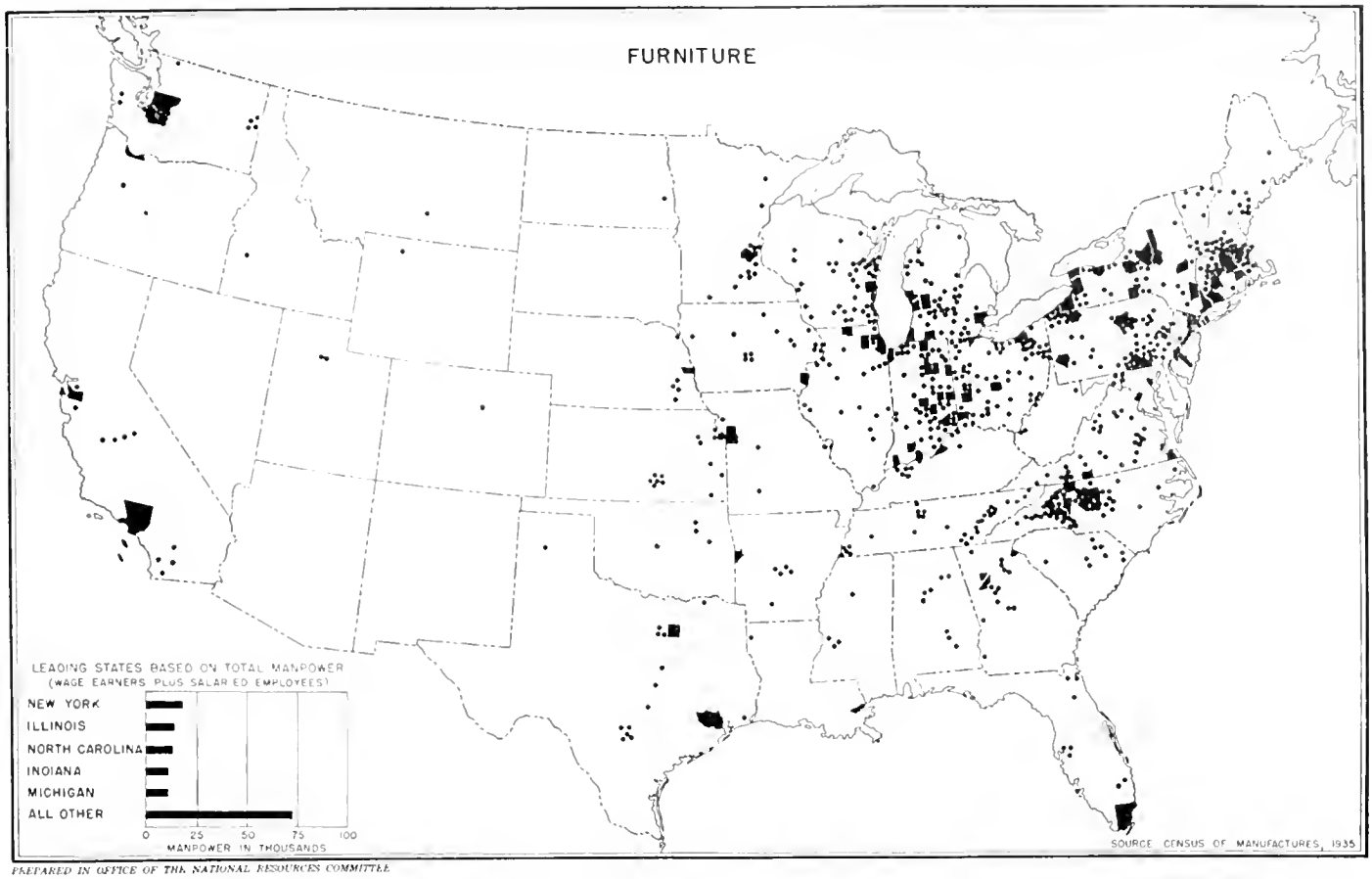
A–42

Plant Location 1935

A–43

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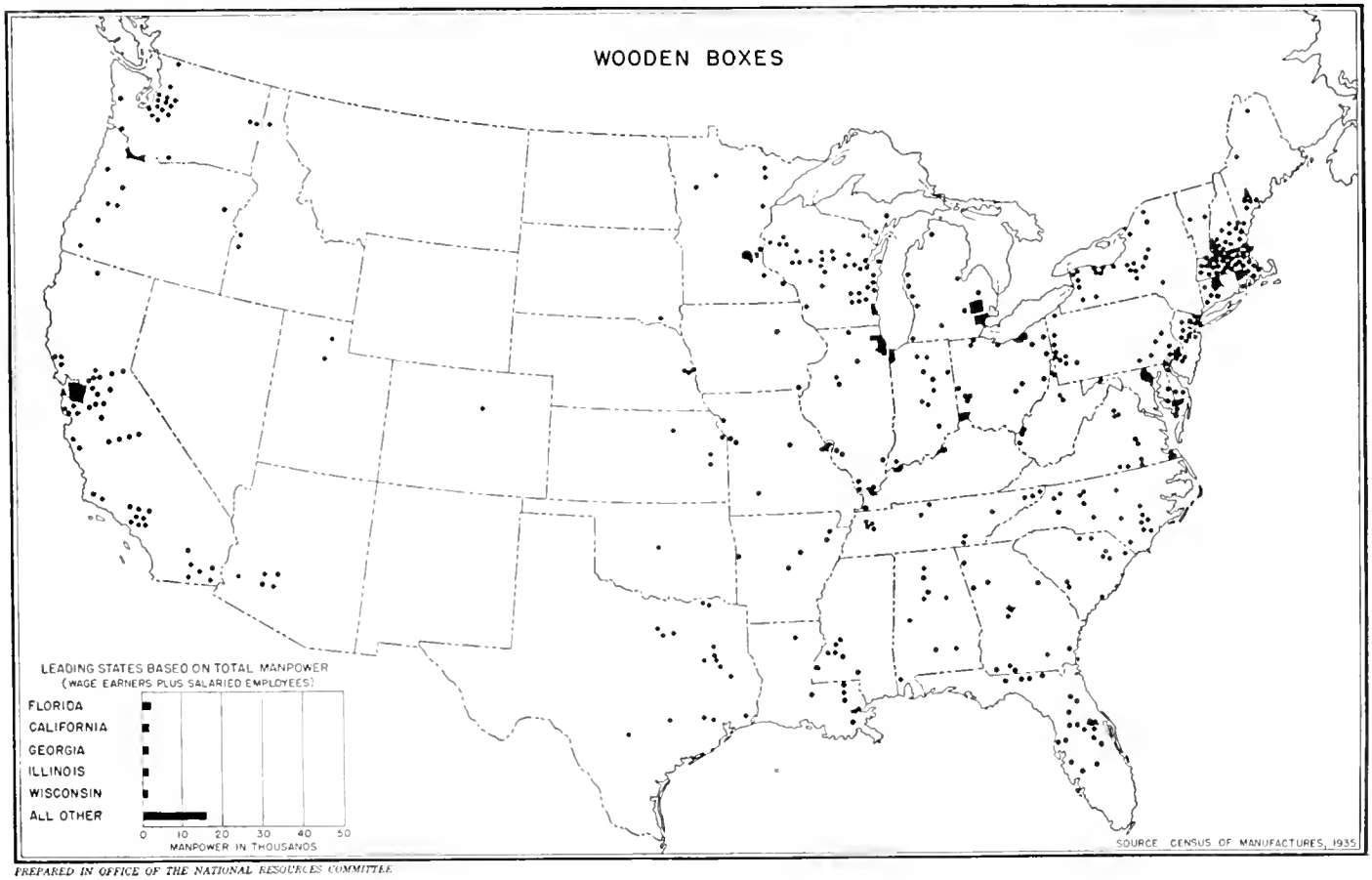


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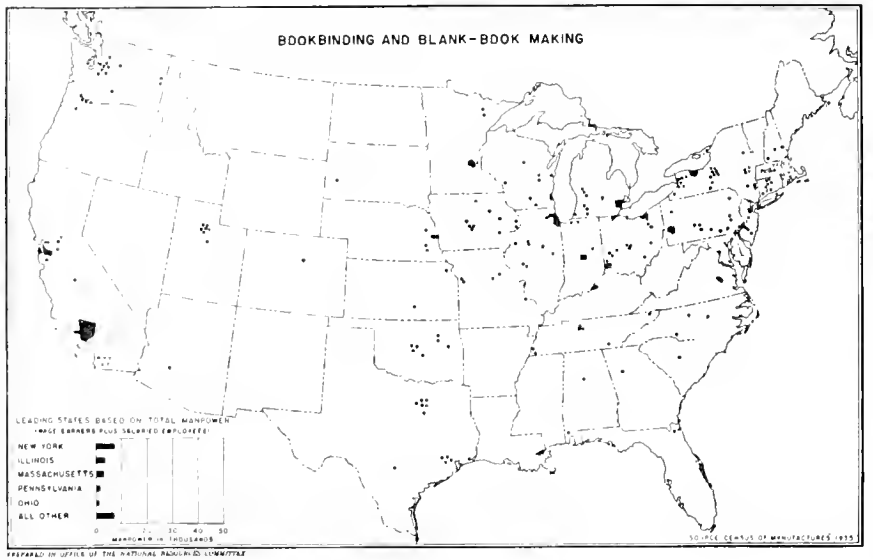
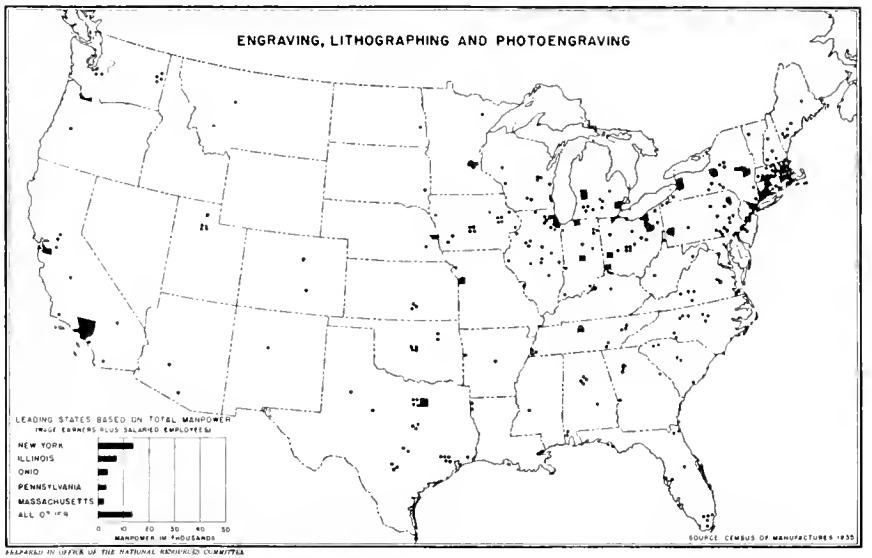
A–44

Plant Location 1935

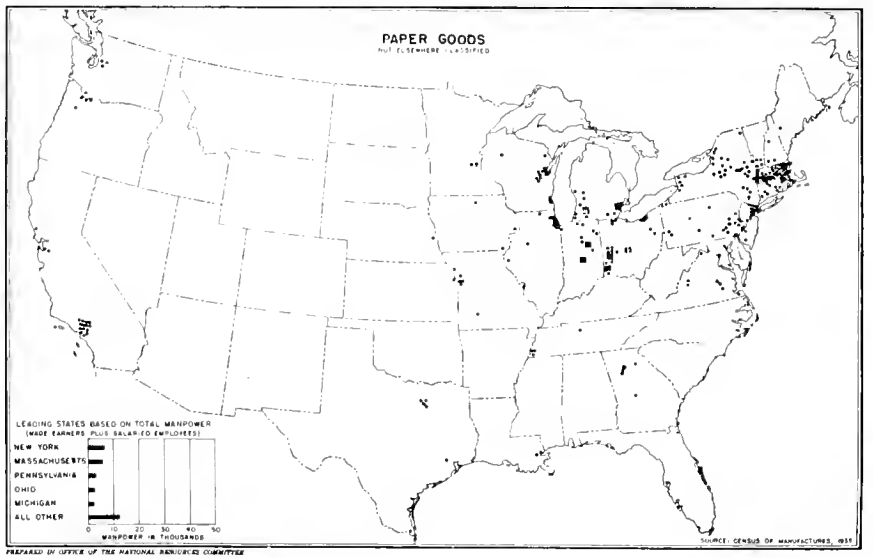
A-45



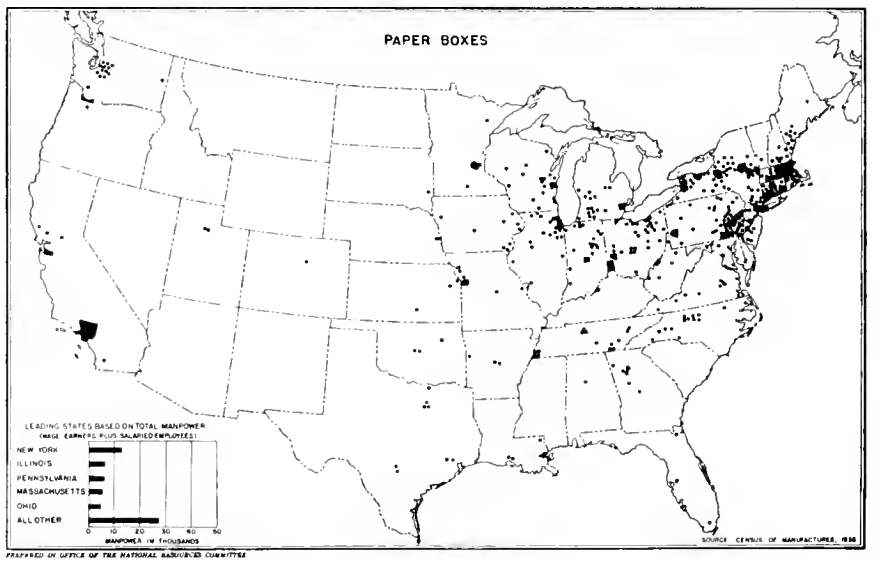

A-46




A-47

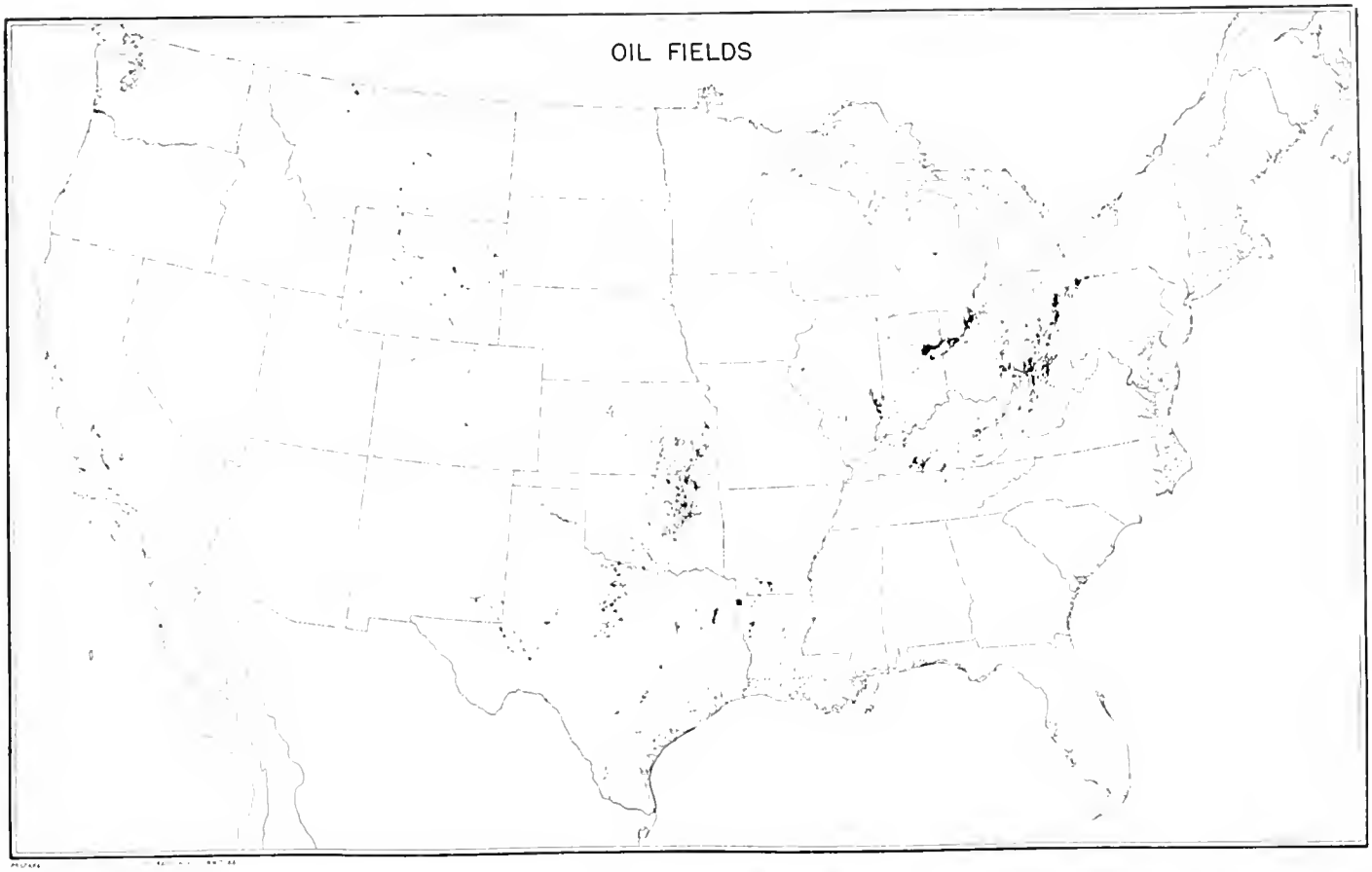


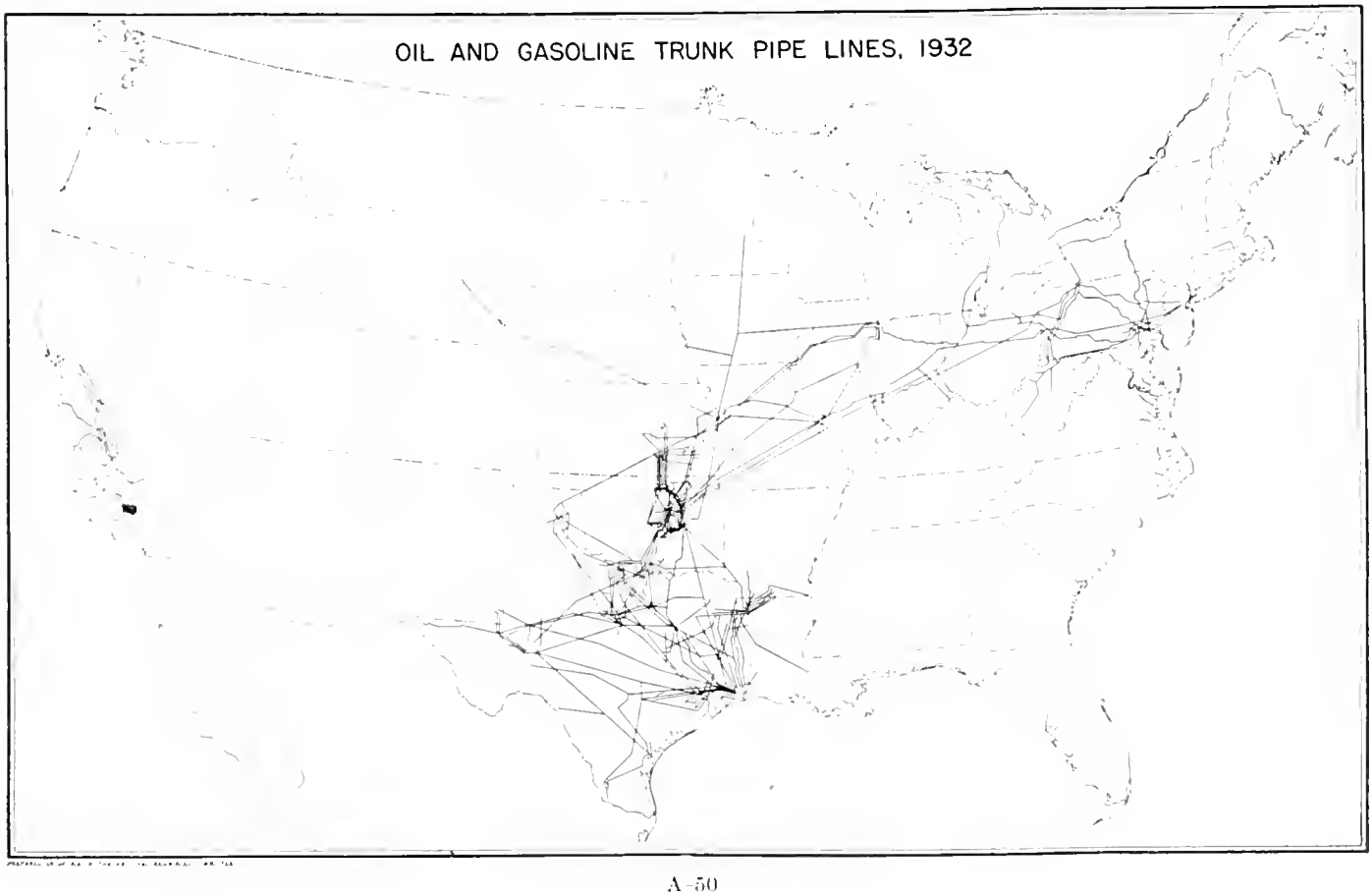

A-48




Plant Location 1935

A 49

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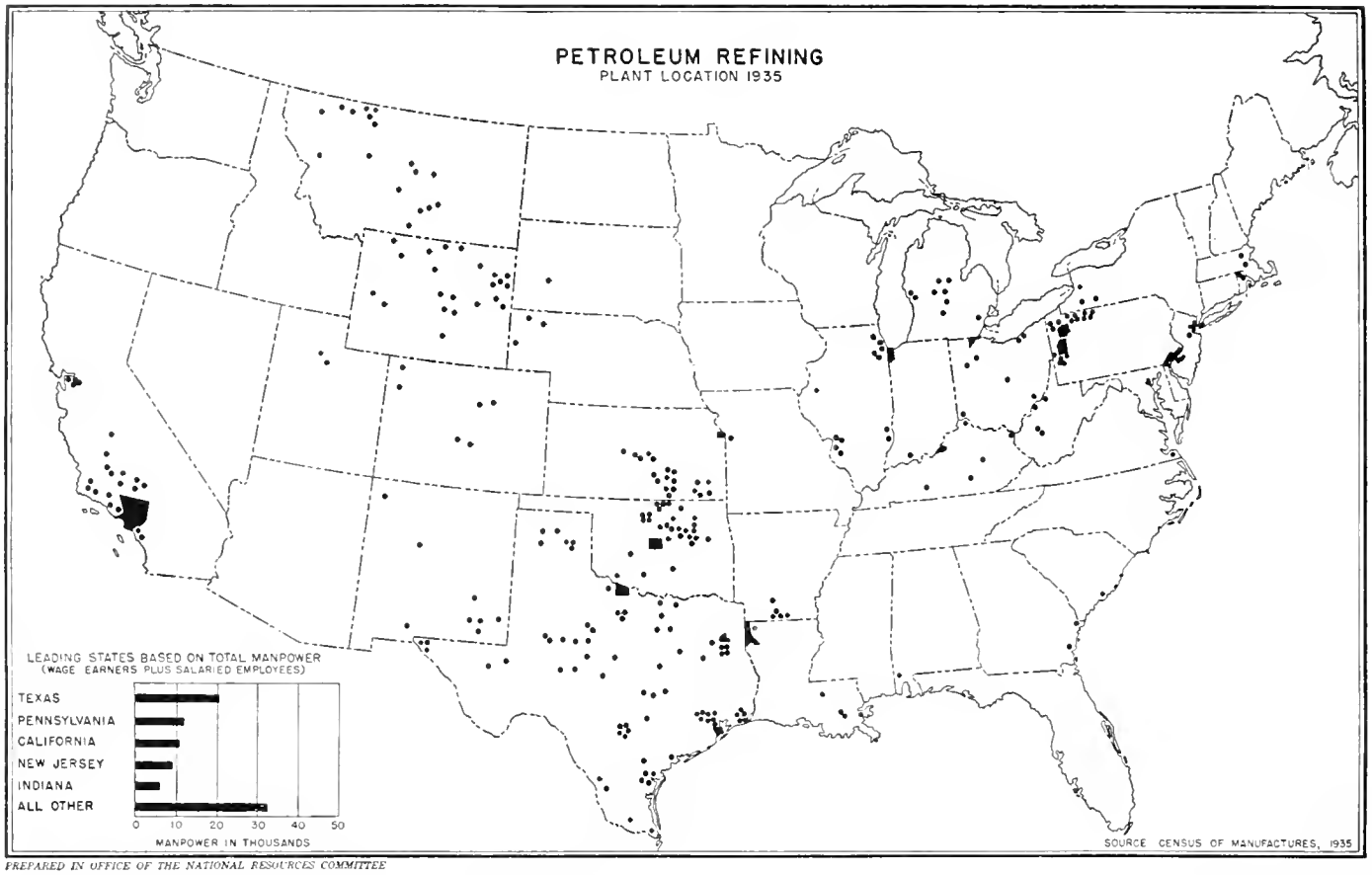


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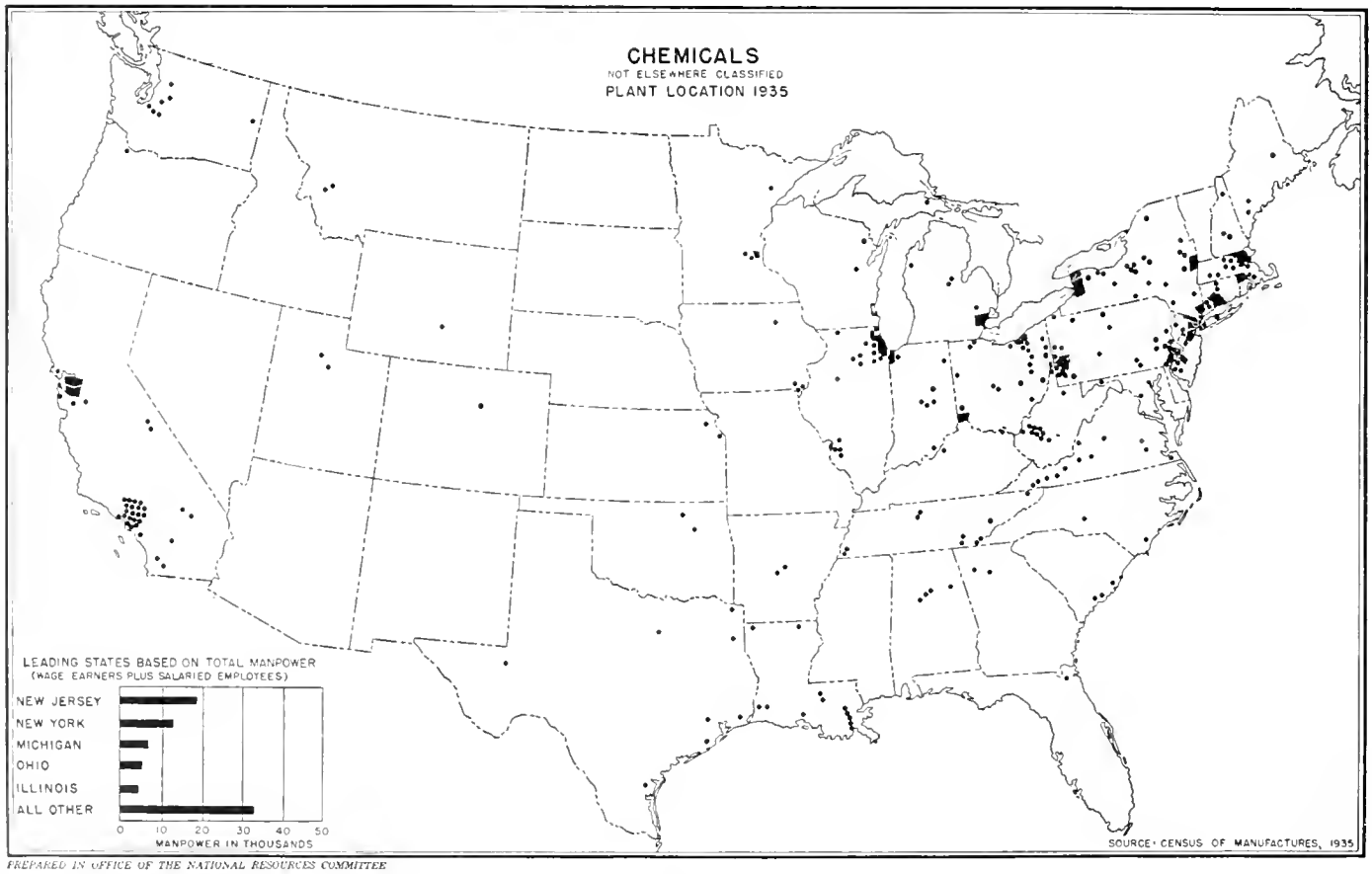


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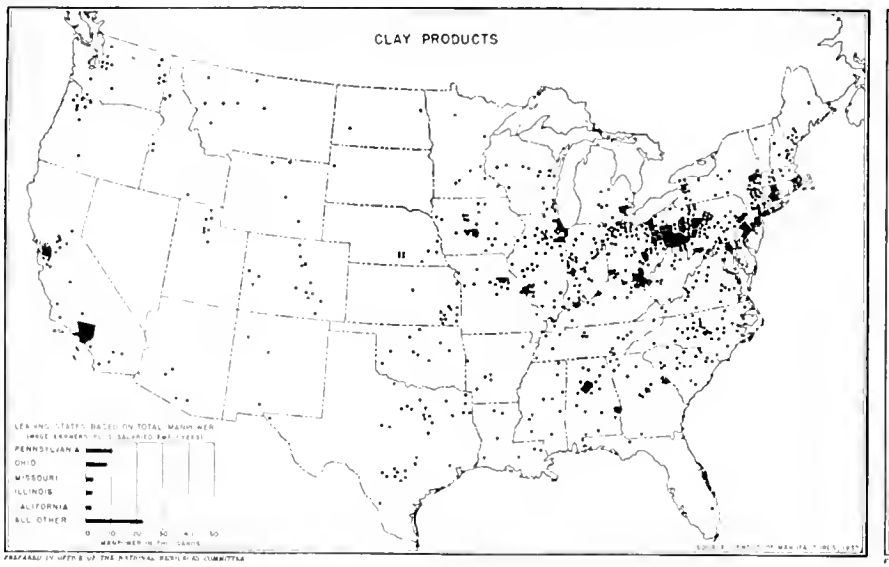
A–53

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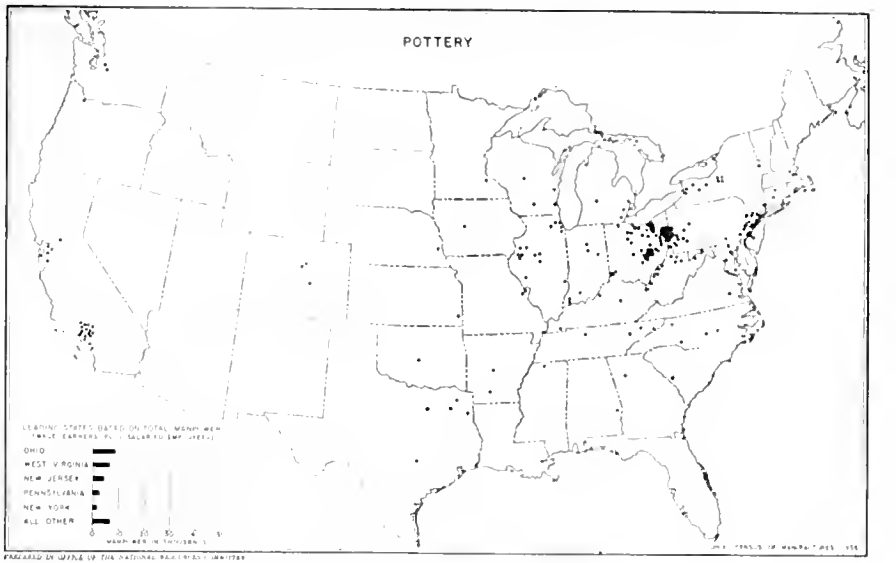


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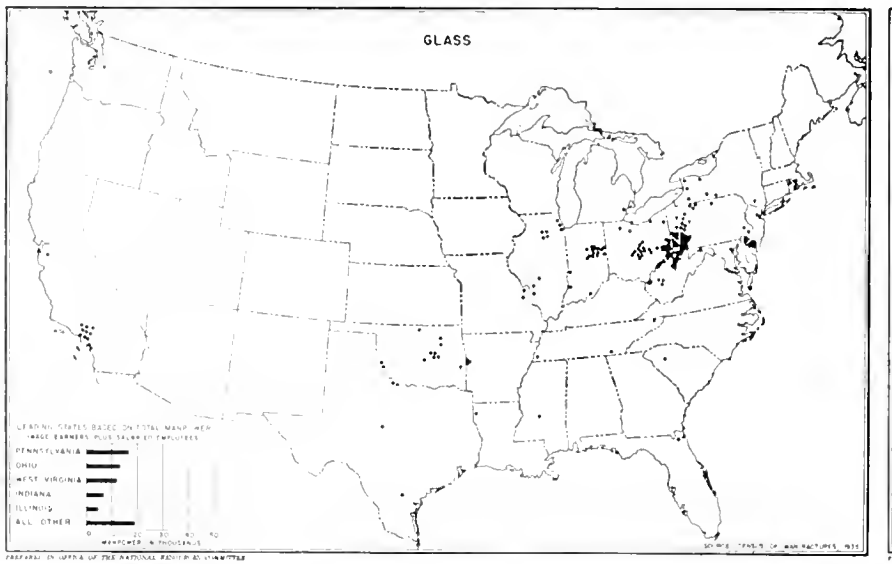


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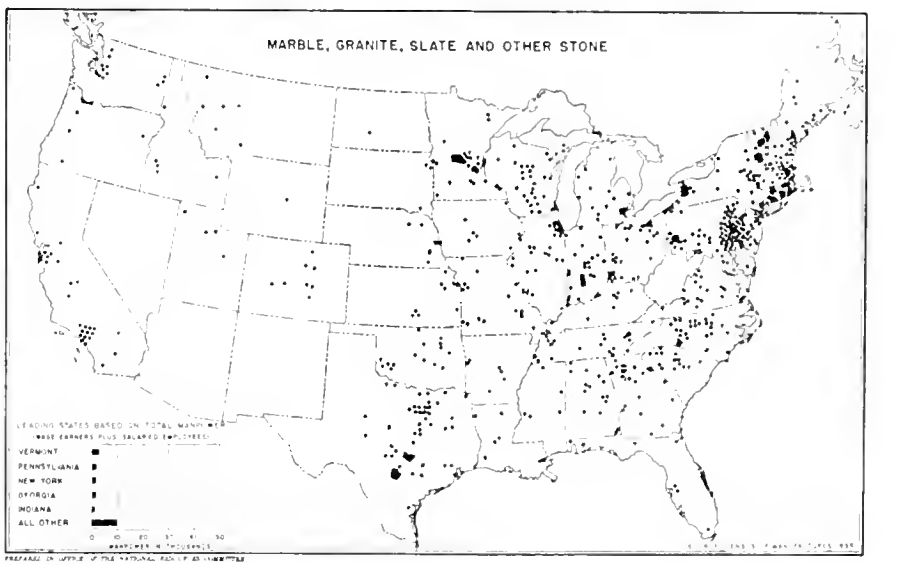
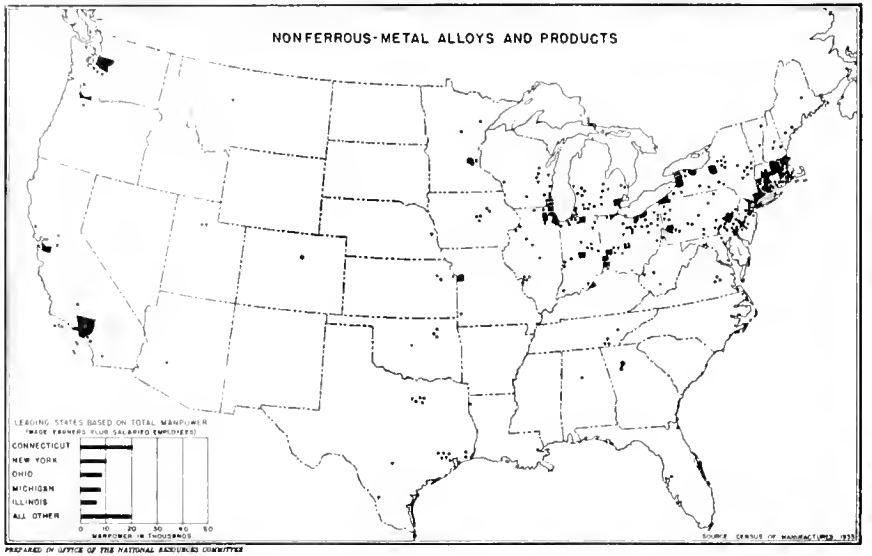



Plant Location 1935

A–57

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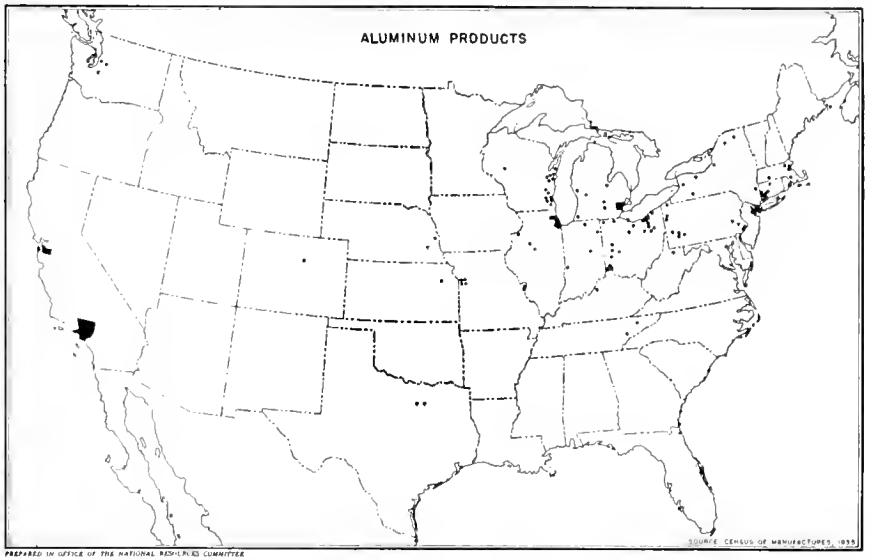


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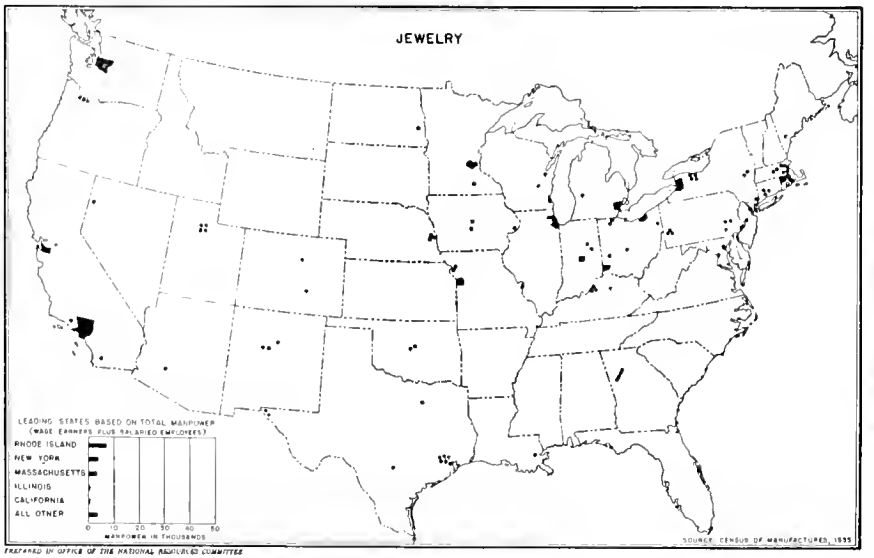


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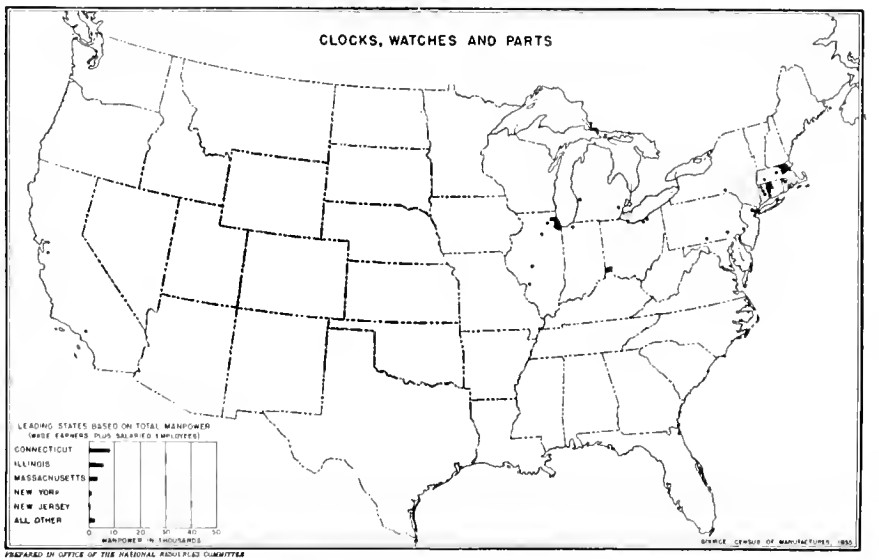
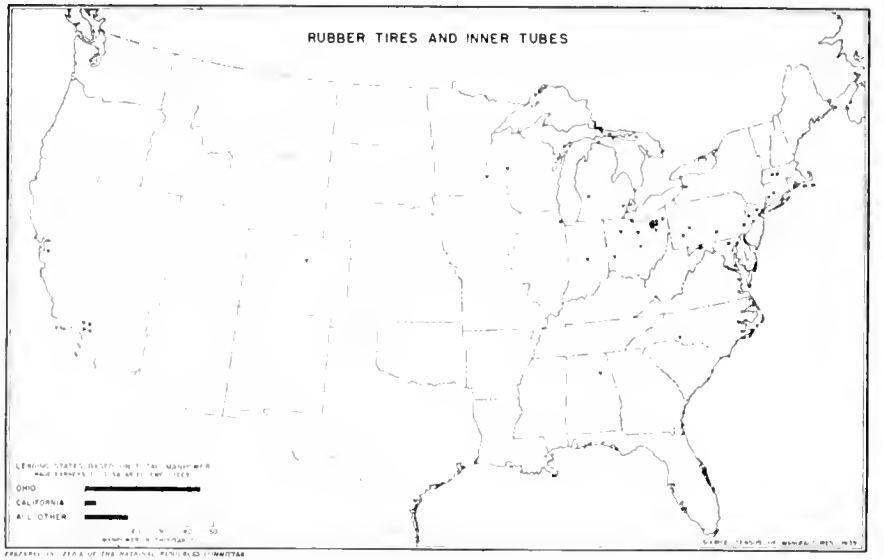
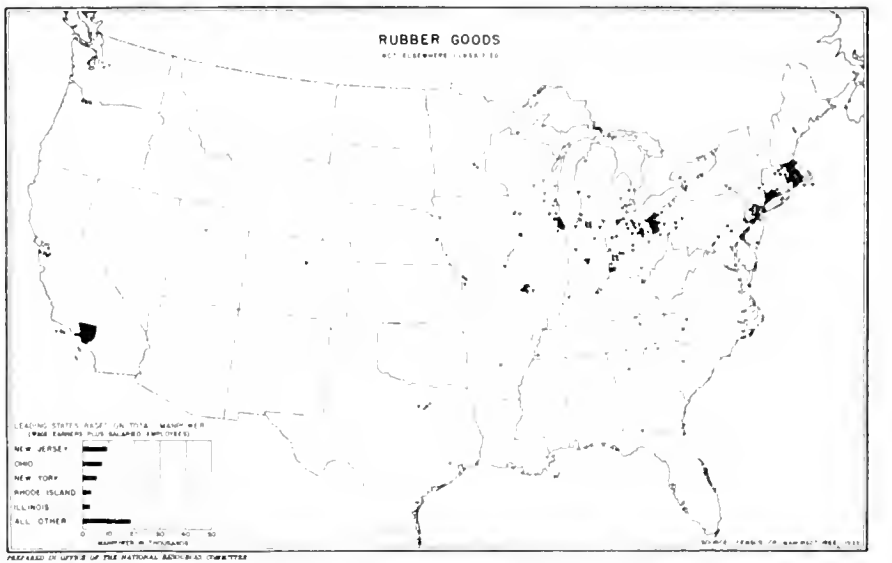



Plant Location 1935

A 61




A 62

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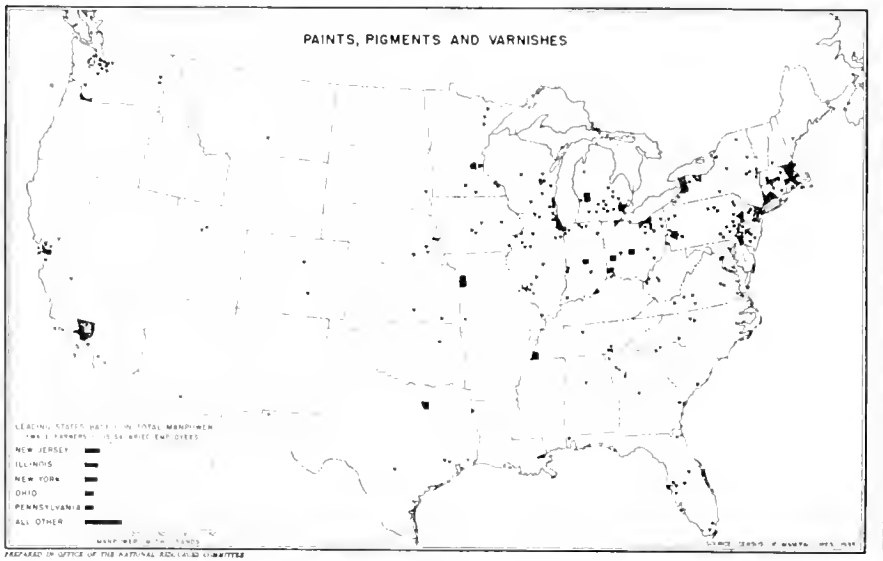


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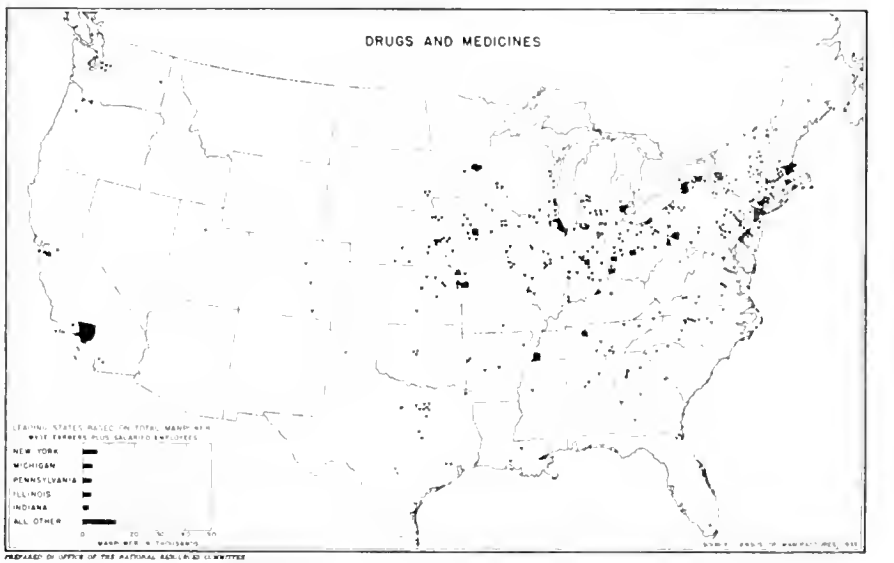
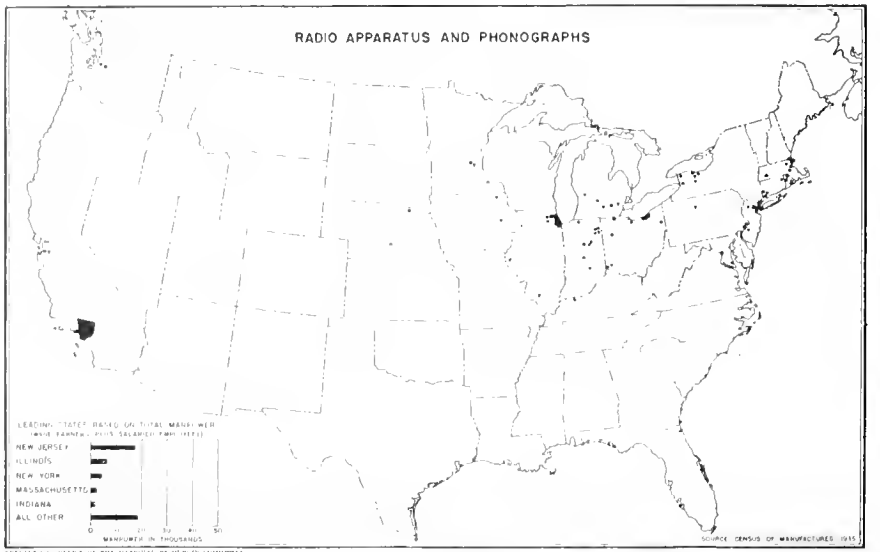



Plant Location 1935

A 65

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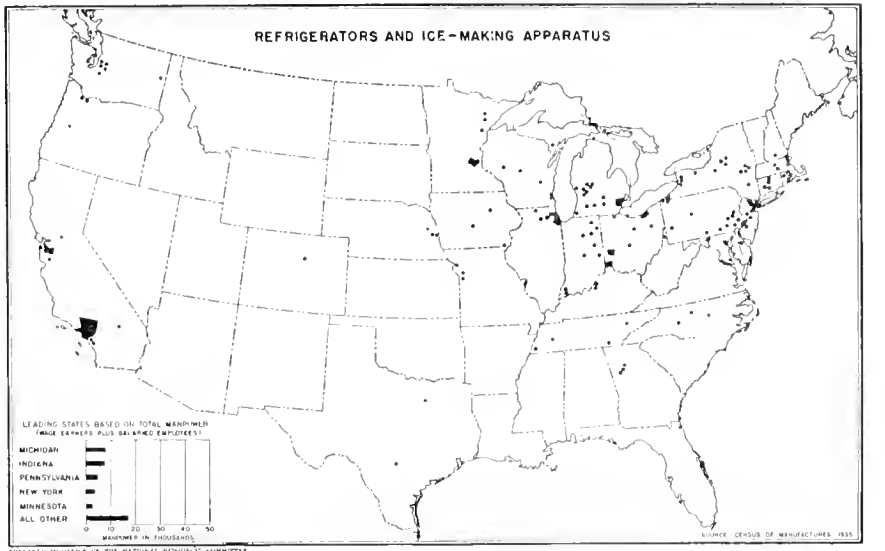


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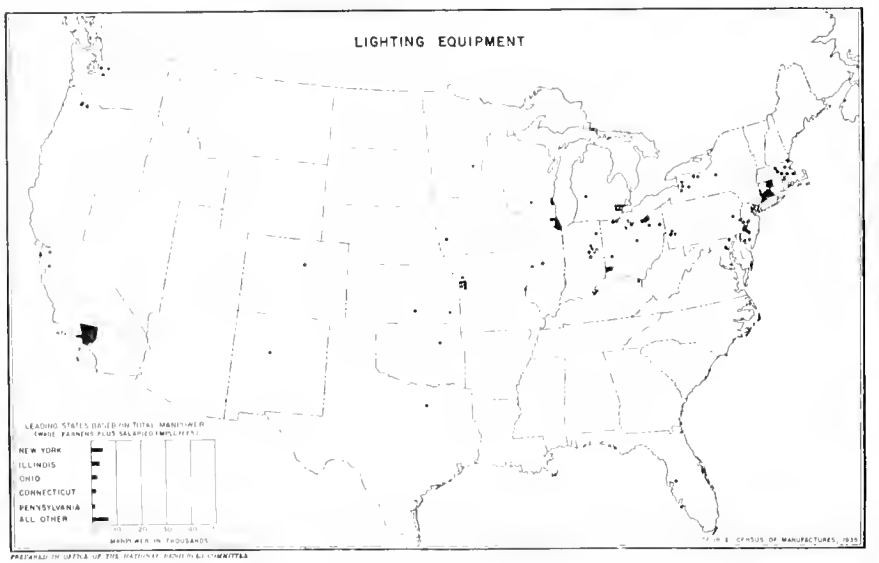
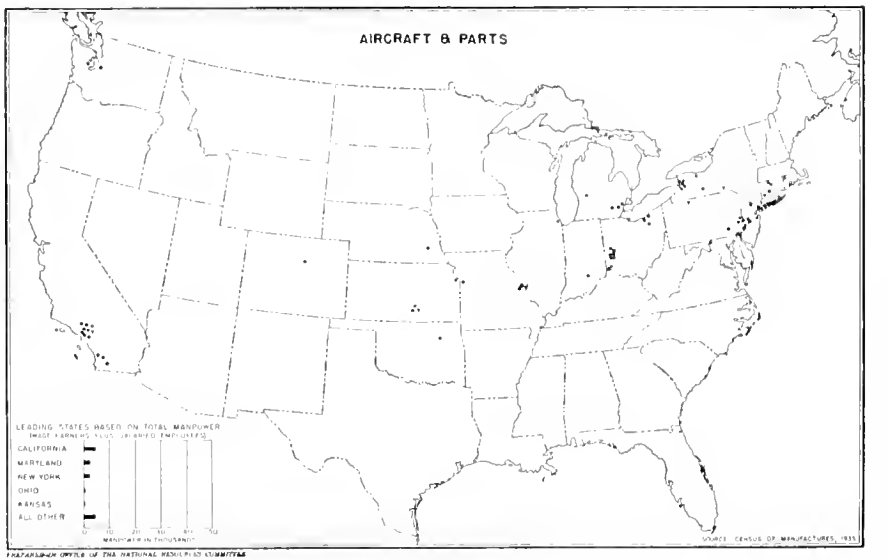
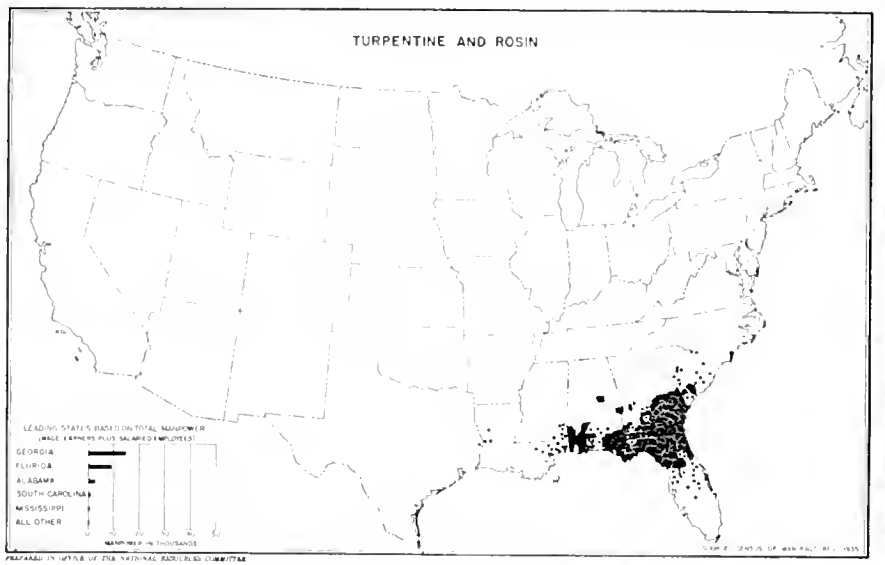



A-68

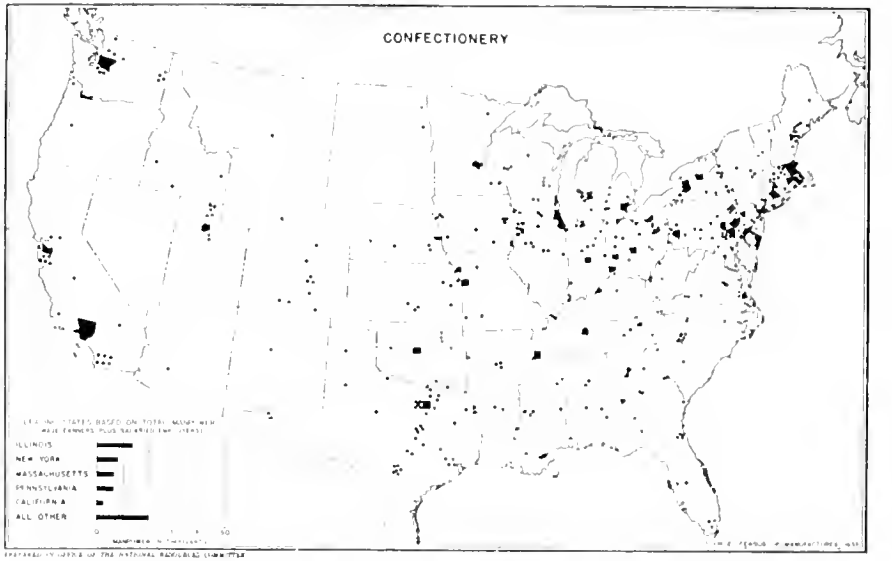



Plant Location 1935

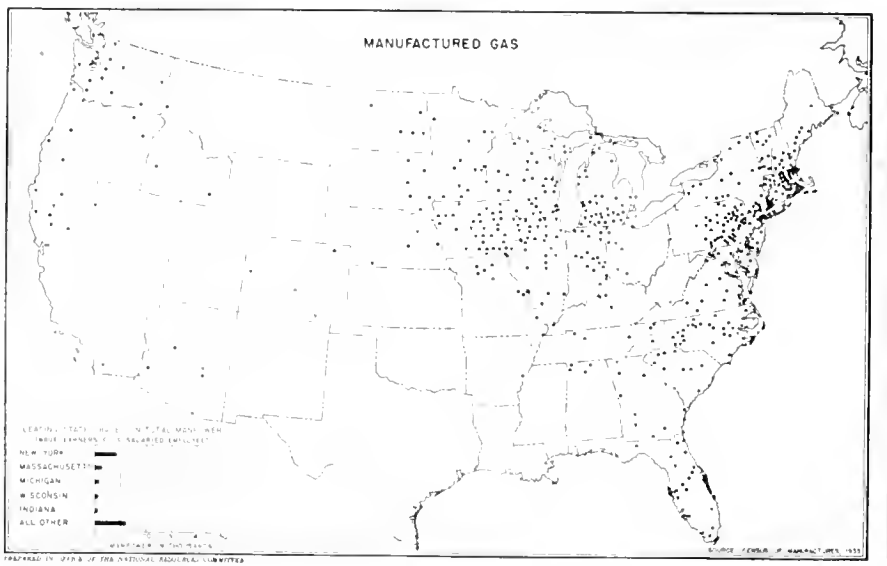
A-69




A 70




A 71




A 72

Plant Location 1935

# APPENDIX 17.—QUANTITATIVE INPUT AND OUTPUT RELATIONS IN 1929

The following table was prepared by Wassily W. Leontief as part of his larger study financed by the Harvard University Committee on Research in the Social Sciences. It is here printed with the kind permission of the author and of the Harvard committee, prior to the publication of the work of which it is a part.

A similar table for 1919 was prepared by Dr. Leontief and published in *The Review of Economic Statistics* for August 1936. A detailed description of the method by which the tables were derived is there presented.

The table constitutes an accounting of the flow of goods from each major segment of the economy to other major segments (and the corresponding flow of money payments from the recipients).

All productive activity is grouped into the segments listed in the table. The value of the product of each segment is allocated to each of the industries estimated to have received the product and, for finished products, to household consumption. Column 44, "undistributed," contains the remainder of the total output of each segment for which no satisfactory basis of allocation has been found. This includes finance, government, and trade, as well as miscellaneous industries not included in the listed classifications. Gross total output is the total output of each segment. Net total output is the gross total less the output allocated within the same segment, e. g., in the case of agriculture, less the part of the output represented by such items as feeds which go to another branch of agriculture. Gross total outlays represent the aggregate value of commodities and services absorbed by the respective segments on both investment and current cost accounts. The net total outlays represent the gross total outlays minus the amount originating within the segment itself.

Values are stated in terms of the value at the point of production, plus transportation. Transportation costs are charged to the producing industry and are distributed (with few exceptions) on the basis of a fixed proportion of the total price.

Wages and salaries and capital and entrepreneurial services (interest paid, dividends paid, and undistributed profits) are shown for each segment in rows 43a and 43b. Wages and salaries allocated to consumption constitute an estimate of the value of services to the consumer. Wages and salaries that are undistributed include the incomes of persons employed in trade and finance and by government, as well as unclassified industries.

The allocation of the output of one industry will serve to illustrate the procedure:

### Slaughter and Meat Packing

(Includes meat packing, lard, and slaughtering; poultry killing, dressing, and packing on a wholesale basis; sausage, meat puddings, headcheese, etc., and sausage casings; and shortenings and vegetable cooking oils.)

| *Allocation* | *Produc* |
|---|---|
| Agriculture | All fertilizers. |
| Bread and bakery products. | Lard, lard substitutes, and other shortening (cost data, *Census of Manufactures*). |
| Slaughter and meat packing. | Meats purchased (cost data, *Census of Manufactures*); sausage casings (total produced minus exports); meats used in sausage, etc., industry (estimated on basis of cost of materials, taking into account other known major cost elements); dressed poultry sold within industry for further processing (estimated). |
| Butter, cheese, etc. | Oleo oil and stock (production data, *Census of Manufactures*). |
| Other food products | Meats used in manufacture of meat products (such as sliced and packed bacon, dried beef, etc.) in the food preparations (not elsewhere classified) industry (estimated on basis of cost of materials). |
| Chemicals | Stearin, fertilizer materials, specified as such; grease and tallow, including soap stock; and an estimated (from cost of materials) amount for materials used in the grease and tallow (not including lubricating grease) industry. |
| Yarn and cloth | Wool. |
| Leather, tanning | Hides, skins, and pelts. |
| Consumption | All meat products not elsewhere distributed; all lard not elsewhere distributed; oleomargarine; all shortenings and vegetable cooking oils not elsewhere distributed; poultry products ready for consumption; and a small amount of soap produced within this group. |
| Undistributed | All products not elsewhere distributed (mainly miscellaneous unspecified products). |

TABLE 1A.—*Quantitative input and output relations in the economic*

(Unit=

| | | Agriculture | Flour and grist mill products | Canning and preserving | Bread and bakery products | Sugar, glucose, and starch | Liquors and beverages | Tobacco manufactures | Slaughtering and meat packing | Butter, cheese, etc. | Other food industries | Iron mining | Blast furnaces | Steel works and rolling mills | Other iron and steel and electric manufactures | Automobiles | Nonferrous metal mining | Smelting and refining | Brass, bronze, copper, etc., manufactures | Nonmetal minerals | Petroleum and natural gas | Refined petroleum |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| 1 | Agriculture | 52.7 | 7.8 | 2.5 | 0.4 | 0.6 | 0.1 | 1.2 | 21.6 | 7.9 | 2.2 | | | | | | | | | | | |
| | | *54.1* | *4.7* | *28.4* | *2.5* | *7.8* | *4.2* | *9.5* | *61.4* | *68.7* | *13.3* | | | | | | | | | | | |
| 2 | Flour and grist mill products | 38.0 | 1.4 | | 18.6 | | | | | | | | | | | | | | | | | |
| | | *6.7* | *1.4* | | *19.8* | | | | | | | | | | | | | | | | | |
| 3 | Canning and preserving | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| 4 | Bread and bakery products | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| 5 | Sugar, glucose, and starch | .9 | | 5.5 | 6.4 | 1.8 | 1.8 | | | 4.5 | 14.0 | | | | | | | | | | | |
| | | *.1* | | *5.0* | *3.2* | *1.8* | *4.5* | | | *8.2* | *6.8* | | | | | | | | | | | |
| 6 | Liquors and beverages | | | | | | 1.7 | | | | 3.0 | | | | | | | | | | | |
| | | | | | | | *1.5* | | | | *.5* | | | | | | | | | | | |
| 7 | Tobacco manufactures | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| 8 | Slaughtering and meat packing | .1 | | | 2.0 | | | | 10.5 | .1 | .2 | | | | | | | | | | | |
| | | (*) | | | *4.3* | | | | *10.4* | *.3* | *.5* | | | | | | | | | | | |
| 9 | Butter, cheese, etc. | | | | 3.6 | | | | | | 3.5 | | | | | | | | | | | |
| | | | | | *2.5* | | | | | | *2.4* | | | | | | | | | | | |
| 10 | Other food industries | | | | 1.7 | | 1.2 | | | | 6.0 | | | | | | | | | | | |
| | | | | | *1.7* | | *6.1* | | | | *5.8* | | | | | | | | | | | |
| 11 | Iron mining | | | | | | | | | | | | 97.9 | | | | | | | | | |
| | | | | | | | | | | | | | *84.1* | | | | | | | | | |
| 12 | Blast furnaces | | | | | | | | | | | | | 80.5 | 16.8 | 1.1 | | | | | | |
| | | | | | | | | | | | | | | *20.6* | *1.1* | *.2* | | | | | | |
| 13 | Steel works and rolling mills | .8 | | | | | | | | | | (*) | .1 | 18.5 | 49.9 | 12.1 | .2 | | | (*) | 7.9 | |
| | | *.3* | | | | | | | | | | *.3* | *.4* | *17.6* | *12.2* | *8.5* | *1.0* | | | (*) | *11.4* | |
| 14 | Other iron and steel and electric manufacturers | 4.0 | .1 | .7 | .2 | (*) | .1 | (*) | .1 | .2 | .1 | (*) | | .2 | 11.0 | 4.7 | .2 | | .2 | .3 | 1.4 | .1 |
| | | *4.7* | *.5* | *8.8* | *1.3* | *.1* | *4.8* | *.3* | *.2* | *1.8* | *.9* | *1.3* | | *.6* | *10.3* | *12.8* | *4.2* | | *1.4* | *1.8* | *7.6* | *.5* |
| 15 | Automobiles | | | | | | | | | | | | | | | 36.0 | | | | | | |
| | | | | | | | | | | | | | | | | *83.7* | | | | | | |
| 16 | Nonferrous metal mining | | | | | | | | | | | | | | | | .4 | 90.3 | | | | |
| | | | | | | | | | | | | | | | | | *.4* | *43.3* | | | | |
| 17 | Smelting and refining | | | | | | | | | | | | | 1.9 | 10.2 | .3 | | 57.2 | 50.8 | | | |
| | | | | | | | | | | | | | | *.6* | *.8* | *.1* | | *56.1* | *88.0* | | | |
| 18 | Brass, bronze, copper, etc., manufacturers | | | | | | | .7 | | | .7 | | | 2.0 | 41.4 | 9.3 | | | 5.6 | | | |
| | | | | | | | | *.6* | | | *.5* | | | *.8* | *4.0* | *2.6* | | | *5.3* | | | |
| 19 | Nonmetal minerals | .5 | | 1.8 | | (*) | 1.0 | | | | | | 1.3 | .1 | 1.5 | 2.9 | | | | 7.1 | | |
| | | *.1* | | *4.2* | | *.1* | *6.1* | | | | | | *8.2* | *.1* | *.2* | *1.4* | | | | *6.8* | | |
| 20 | Petroleum and natural gas | | | | .1 | (*) | | | .1 | | (*) | | | .8 | .4 | (*) | | .1 | (*) | 1.1 | 3.6 | 80.1 |
| | | | | | *.2* | *.1* | | | *.1* | | *.1* | | | *.5* | *.1* | (*) | | *.2* | *1.0* | *3.6* | *50.8* |
| 21 | Refined petroleum | 1.2 | (*) | (*) | .1 | .1 | (*) | | (*) | (*) | (*) | | | 1.3 | .9 | .2 | .1 | .2 | .2 | .6 | | 4.2 |
| | | *.4* | *.1* | *.1* | *.1* | *.2* | *.3* | | (*) | (*) | *.1* | | | *1.2* | *.2* | *.1* | *.8* | *.7* | *.4* | *.8* | | *3.8* |
| 22 | Coal | | 1 | 1 | .3 | .5 | .1 | (*) | .5 | .3 | .3 | 1 | 1 | 3.2 | 2.7 | .5 | .2 | .5 | .2 | 3.7 | | .3 |
| | | | *.2* | *.3* | *.4* | *1.3* | *.9* | *.1* | *.3* | *.6* | *.4* | *1.0* | *.2* | *2.3* | *.5* | *.2* | *1.0* | *1.2* | *.4* | *3.9* | | *.2* |
| 23 | Coke | | | | .9 | .2 | | | | | | | 40.9 | 5.9 | 4.8 | .2 | | 1.1 | .2 | .2 | | 1.7 |
| | | | | | *.2* | *.1* | | | | | | | *22.6* | *.8* | *.2* | (*) | | *.5* | *.1* | (*) | | *.2* |
| 24 | Manufactured gas | | | | .8 | | | | .2 | | .4 | | .2 | | 2.1 | .4 | | | .2 | .4 | | |
| | | | | | *.2* | | | | (*) | | *.1* | | *.1* | | *.1* | (*) | | | *.1* | *.1* | | |
| 25 | Electric utilities | | .3 | (*) | .3 | | (*) | (*) | .2 | .1 | .3 | 1 | (*) | .7 | 2.1 | .5 | .3 | .2 | .2 | 1.2 | | .2 |
| | | | *.6* | *.2* | *.7* | | *.6* | *.1* | *.2* | *.3* | *.8* | *1.7* | *.1* | *1.0* | *.2* | *.5* | *2.9* | *.7* | *.7* | *2.4* | | *.2* |
| 26 | Chemicals | 11.3 | | | | | .1 | | 2.9 | .1 | .2 | 2 | | | 1.2 | 1.0 | .3 | | 1.5 | .7 | .1 | .5 |
| | | *4.0* | | | | | *1.2* | | *2.8* | *.2* | *.5* | *2.3* | | | *.3* | *.8* | *1.9* | | *4.2* | *1.1* | *.1* | *.6* |
| 27 | Lumber and timber products | 12.6 | | | | | | | | | | .1 | | | 1.8 | 3.0 | .4 | | | | | |
| | | *2.5* | | | | | | | | | | *.7* | | | *.3* | *1.4* | *1.7* | | | | | |
| 28 | Other wood products | | | | | | | .8 | | | | | | | 6.0 | | | | | | | |
| | | | | | | | | *.9* | | | | | | | *.7* | | | | | | | |
| 29 | Paper and wood pulp | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| 30 | Other paper products | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| 31 | Printing and publishing | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| 32 | Yarn and cloth | .4 | | | | | | | | | | | | | 1 | 4 | | | | | | |
| | | *.2* | | | | | | | | | | | | | (*) | *4* | | | | | | |
| 33 | Clothing | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| 34 | Other textile products | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| 35 | Leather tanning | | | | | | | | | | | | | | | 1.7 | | | | | | |
| | | | | | | | | | | | | | | | | *.2* | | | | | | |
| 36 | Leather shoes | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| 37 | Other leather products | 8.7 | | | | | | | | | | | | | | | | | | | | |
| | | *.2* | | | | | | | | | | | | | | | | | | | | |
| 38 | Rubber manufactures | 1.0 | | | | | | | | | | | | | .7 | 24.0 | | | | | | |
| | | *.1* | | | | | | | | | | | | | *.1* | *6.2* | | | | | | |
| 39 | Industries, n. e. s. | 1.8 | | | | | | | | | | | | | .5 | .8 | | | | | | |
| | | *.4* | | | | | | | | | | | | | *.1* | *.4* | | | | | | |
| 40 | Construction | | .1 | .1 | .2 | .1 | .1 | | .2 | .1 | .2 | (*) | .1 | .7 | .8 | .6 | 1 | 1 | .6 | .1 | | 1.7 |
| | | | *.4* | *.7* | *1.0* | *.5* | *1.2* | | *.3* | *.3* | *.9* | *.7* | *.6* | *1.5* | *.4* | *1.0* | *1.7* | *.7* | *3.3* | *.4* | | *3.6* |

[1] Arabic = percentages of the net totals of the rows (net total output). These are based on the corresponding actual figures. (Unit = 1 percent.) Asterisks indicate percentages of less than $\frac{1}{2}$ of 1 percent. The net total output percentages (column 40) sometimes vary from 100 percent, because for checking purposes they were derived by adding all the percentage figures (arabic) in the corresponding row (excluding the distribution percentage of any industry to itself; e. g., 1 to 1, 2 to 2, etc.).

*system of the United States, 1929: Percentage distribution*[1]

1 percent

| Coal | Coke | Manufactured gas | Electric utilities | Chemicals | Lumber and timber products | Other wood products | Paper and wood pulp | Other paper products | Printing and publishing | Yarn and cloth | Clothing | Other textile products | Leather tanning | Leather shoes | Other leather products | Rubber manufactures | Industries, n. e. s. | Construction | Transportation (steam railroads) | Exports | Consumption | Undistributed | Gross total output | Net total output | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 0 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | |
| | | | | 1.9 | 0.5 | (*) | 0.2 | | | 0.1 | | | (*) | | | | | | | 11.8 | 32.4 | 2.6 | 152.7 | 99.8 | |
| | | | | *5.2* | *2.8* | *0.3* | *1.6* | | | *18.5* | | | *0.7* | | | | | | | *22.8* | *5.7* | *.5* | *6.2* | *1.5* | 1 |
| | | | | | | | | | | | | | | | | | | | | 6.0 | 36.8 | .6 | 101.4 | 100.0 | |
| | | | | | | | | | | | | | | | | | | | | *2.0* | *1.0* | (*) | *.2* | *.8* | 2 |
| | | | | | | | | | | | | | | | | | | | | 11.6 | 82.5 | 5.9 | 100.0 | 100.0 | |
| | | | | | | | | | | | | | | | | | | | | *1.9* | *1.1* | *.1* | *.4* | | 3 |
| | | | | | | | | | | | | | | | | | | | | .2 | 98.9 | .9 | 100.0 | 100.0 | |
| | | | | | | | | | | | | | | | | | | | | *.1* | *2.5* | (*) | *.6* | *.7* | 4 |
| | | | | | | | | | | .6 | | | | | | | | | | 2.6 | 58.3 | 5.4 | 101.8 | 100.0 | |
| | | | | | | | | | | *.1* | | | | | | | | | | | | *.8* | *1.* | | 5 |
| | | | | | | | | | | | | | | | | | | | | 1.4 | 95.6 | | 101.7 | 100.0 | |
| | | | | | | | | | | | | | | | | | | | | *.1* | *.5* | | *.1* | *.1* | 6 |
| | | | | | | | | | | | | | | | | | | | | 1.5 | 98.1 | .4 | 100.0 | 100.0 | |
| | | | | | | | | | | | | | | | | | | | | | *2.0* | (*) | *.5* | *.6* | 7 |
| | | | | 1.7 | | | | | | .6 | | | 3.2 | | | | | | | 5.7 | 82.7 | 3.7 | 110.5 | 100.0 | |
| | | | | *1.6* | | | | | | *.4* | | | *21.0* | | | | | | | *8.9* | *4.8* | *.2* | *1.6* | *1.6* | 8 |
| | | | | | | | .3 | | | | | | | | | | | | | 1.5 | 89.2 | 1.9 | 100.0 | 100.0 | |
| | | | | | | | *.3* | | | | | | | | | | | | | *.8* | *1.6* | (*) | *.5* | *.5* | 9 |
| | | | | | | | | | | | | | | | | | | | | .1 | 93.2 | 3.0 | 106.6 | 100.0 | |
| | | | | | | | | | | | | | | | | | | | | *.8* | *2.5* | *.1* | *.7* | *.7* | 10 |
| | | | | | | | | | | | | | | | | | | | | 1.7 | | .3 | 100.0 | 99.9 | |
| | | | | | | | | | | | | | | | | | | | | *1* | | (*) | *.1* | | 11 |
| | | | | | | | | | | | | | | | | | | 0.2 | | 1 | | 1.2 | 100.0 | 99.9 | |
| | | | | | | | | | | | | | | | | | | (*) | | (*) | | (*) | *.4* | | 12 |
| .1 | | | | | | | .3 | | | | | | | | | | 2 | 2.8 | 6.6 | 5.1 | .3 | 13.6 | 118.5 | 100.0 | |
| *.2* | | | | | | | *.6* | | | | | | | | | | *.3* | *1.2* | *2.8* | *8.0* | *.8* | (*) | *1.4* | *1.3* | 13 |
| .4 | | .1 | 4.6 | (*) | .3 | .3 | .3 | (*) | .4 | 1.0 | .1 | (*) | | .1 | .1 | .1 | 3 | 12.6 | 13.5 | 7.0 | 9.9 | 36.1 | 111.0 | 99.8 | |
| *1.7* | | *2.3* | *10.4* | *.1* | *1.9* | *2.2* | *2.8* | *.7* | *1.8* | *2.5* | *.4* | *.3* | | *1.2* | *4.1* | *1.2* | *1.4* | *20.3* | *21.6* | *15.4* | *1.9* | *5.1* | *3.1* | *5.2* | 14 |
| | | | | | | | | | | | | | | | | | | | | 13.3 | 73.0 | 13.7 | 136.0 | 100.0 | |
| | | | | | | | | | | | | | | | | | | | | *10.2* | *4.8* | *1.0* | *2.2* | *1.8* | 15 |
| | | | | | | | | | | | | | | | | | | | | .2 | | 9.0 | 100.4 | 99.9 | |
| | | | | 4 | | | | | | | | | | | | | | | | (*) | | *.1* | *.2* | *.2* | 16 |
| | | | | *1* | | | | | | | | | | | | | | | | 17.0 | | 12.8 | 157.2 | 100.0 | |
| | | | | 5.3 | | | | | .2 | | | 1 | | | | .8 | | .6 | | *8.0* | | *.2* | *.6* | *.4* | 17 |
| | | | | *1.3* | | | | | *.1* | | | *.2* | | | | *.6* | | *.1* | | 6.4 | 9.3 | 19.8 | 105.6 | 100.0 | |
| | | | 4.0 | 9 | | | | | .4 | | | | | | | | 2.2 | 2.9 | | *1.5* | *.2* | *.4* | *.5* | *.5* | 18 |
| | | | *.9* | *3* | | | | | *.2* | | | | | | | | *1.1* | *.6* | | 3.5 | 7.1 | 16.8 | 107.1 | 100.0 | |
| | | | .8 | 4.1 | | | .6 | | | | | | (*) | | | (*) | .5 | 56.2 | 1.3 | *1.4* | *.2* | *.6* | *.9* | *.9* | 19 |
| | | | *.3* | *2.8* | | | *1.2* | | | | | | *.2* | | | *.1* | *.1* | *16.3* | *.4* | 1.8 | 9.3 | 4.1 | 103.6 | 99.5 | |
| | | .1 | 1.1 | .3 | | | (*) | | (*) | | | | | | | | .1 | | | *.7* | *.2* | *.8* | *.9* | *.9* | 20 |
| | | *.4* | | *.2* | | | (*) | | (*) | | | | | | | | *.1* | | | 17.7 | 39.0 | 30.6 | 104.2 | 99.6 | |
| | (*) | 1.3 | .5 | 3 | .1 | | .1 | | (*) | .3 | | | | | | (*) | .5 | 1.1 | 3.2 | *10.0* | *1.9* | *1.7* | *1.2* | *1.8* | 21 |
| | *.2* | *2.6* | *.8* | *2* | *.7* | | *.4* | | (*) | *.2* | | | | | | | *.6* | *.4* | *1.3* | 4.2 | 29.1 | 12.0 | 100.6 | 99.8 | |
| .6 | 11.5 | 2.2 | 6.8 | 1.7 | .3 | .3 | 2.0 | .1 | .1 | 1.7 | .1 | (*) | .2 | .1 | | | .4 | | 12.9 | *1.9* | *1.1* | *.5* | *.9* | *1.0* | 22 |
| *.8* | *36.5* | *3.3* | *8.1* | *1.1* | *.8* | *.5* | *4.2* | *.3* | *.1* | *.9* | *.1* | *.2* | *.9* | *.2* | | | *.4* | | | 5.0 | 12.0 | 14.1 | 100.9 | 100.2 | |
| | *.9* | *4.3* | | *8.5* | | | | | | | | | | | | | | | | *.4* | *.1* | *1* | *.2* | *.2* | 23 |
| | *.8* | *3.9* | | *1.0* | | | | | | | | | | | | | | | | 78.6 | 14.4 | 101.7 | 100.0 | | |
| | | 1.7 | | 1.3 | | | | | .4 | .2 | | .2 | | | | .2 | | | | *.6* | *.1* | *.2* | *.2* | 24 |
| | | *1.6* | | *.2* | | | | | *.1* | (*) | | (*) | | | | (*) | | | | 51.4 | 35.6 | 104.8 | 99.7 | |
| .9 | (*) | .1 | 4.8 | 1.0 | .2 | .2 | .5 | .1 | .4 | 1.3 | .2 | (*) | (*) | .1 | (*) | .2 | .7 | | .1 | *3.6* | *2.8* | *1.8* | *1.9* | 25 |
| *.6* | *.4* | *.8* | *4.0* | *1.1* | *.5* | *.5* | *3.0* | *.6* | *.6* | *1.2* | *.3* | *.3* | *.4* | *.4* | *.4* | *.9* | *1.8* | | *.1* | 6.3 | 29.3 | 33.9 | 108.0 | 100.3 | |
| *.6* | | | | *8.0* | *.5* | | *.4* | | *1.2* | *5.5* | | | *.3* | | | *.4* | *.1* | *1.7* | | *4.2* | *1.7* | *2.2* | *1.5* | *1.6* | 26 |
| *.8* | | | | *7.4* | | | *1.3* | | *1.4* | *4.2* | | | *1.9* | | | *1.1* | *.1* | *.8* | | 7.7 | .1 | 31.6 | 128.1 | 100.2 | |
| 1.8 | | | 1.9 | .6 | 28.1 | 13.2 | .4 | | | | | | | .1 | .1 | | .8 | 15.8 | 8.2 | *2.8* | *.1* | *1.1* | *1.0* | *.9* | 27 |
| *1.5* | | | *.7* | *.3* | *26.5* | *11.5* | *.7* | | | | | | | *.2* | *.4* | | *.6* | *4.2* | *8.2* | 2.1 | 56.6 | 33.6 | 101.4 | 100.0 | |
| | | | | | | 1.4 | | | | .4 | | | | .5 | | | | | | *.6* | *1.3* | *.9* | *.6* | *.6* | 28 |
| | | | | | | *1.8* | | | | *.1* | | | | *.7* | | | | | | 2.4 | 6.1 | 32.8 | 122.3 | 99.9 | |
| | | | | | | | 22.3 | 28.8 | 26.0 | | | | | | | | 1.9 | 1.9 | | *.5* | *.1* | *.6* | *.5* | *.5* | 29 |
| | | | | | | | *21.3* | *41.8* | *9.3* | | | | | | | | *.9* | *.3* | | 1.7 | 13.5 | 79.6 | 100.0 | 100.0 | |
| | | | | | | | | | 5.2 | | | | | | | | | | | *.2* | *.1* | *1.0* | *.3* | *.3* | 30 |
| | | | | | | | | | *1.2* | | | | | | | | | | | .9 | .9 | 25.1 | 73.0 | 114.6 | 99.9 | |
| | | | | | | | | | 14.6 | | | | | | | | | | .9 | *.5* | *1.1* | *3.7* | *1.3* | *1.2* | 31 |
| | | | | | | | | | *15.8* | | | | | | | | | | *.3* | 4.0 | 42.0 | 10.8 | 115.4 | 99.7 | |
| | | | | | | .2 | .3 | | .1 | 15.4 | 30.3 | 7.4 | | .5 | (*) | 2.4 | .8 | (*) | | *8.4* | *3.1* | *.9* | *2.1* | *.9* | 32 |
| | | | | | | *.7* | *1.4* | | *.2* | *15.0* | *58.0* | *58.9* | | *2.3* | *.4* | *9.3* | *1.6* | (*) | | .4 | 97.2 | 2.4 | 108.6 | 100.0 | |
| | | | | | | | | | | | *8.6* | | | | | | | | | *.8* | *5.5* | *.2* | *1.5* | *1.6* | 33 |
| | | | | | | | | | | | *8.4* | | | | | | | | | 2.7 | 28.9 | 12.7 | 100.0 | 99.9 | |
| | | | | | | 4.5 | | | .5 | 5.5 | 13.8 | | | | 1.3 | | | | | *.3* | *.5* | *.2* | *.8* | *.8* | 34 |
| | | | | | | *1.7* | | | *.1* | *.7* | *2.3* | | | | *.8* | | | | | 8.1 | 6.6 | 11.7 | 100.4 | 99.9 | |
| | | | | 4.7 | | 1.1 | | | .8 | | 2.3 | | .4 | 44.7 | 17.8 | | .4 | | | *.8* | *.1* | *.1* | *.2* | *.2* | 35 |
| | | | | *.7* | | *.4* | | | *.1* | | *.8* | | *.4* | *28.6* | *85.1* | | *.1* | | | 1.2 | 98.8 | | 120.2 | 100.0 | |
| | | | | | | | | | | | | | | 20.2 | | | | | | *.2* | *1.5* | | *.5* | *.4* | 36 |
| | | | | | | | | | | | | | | *19.5* | | | | | | 2.3 | 68.6 | 20.5 | 101.1 | 100.1 | |
| | | | | | | | | | | | | | | | 1.1 | | | | | *.1* | *.3* | *.1* | *.1* | *.1* | 37 |
| | | | | | | | | | | | | | | | *1.1* | | | | | 6.9 | 46.3 | 18.2 | 102.0 | 99.9 | |
| | | | | | | | | | | .3 | .9 | | | 1.5 | | 2.0 | | .1 | | *1.5* | *.8* | *.4* | *.4* | *.5* | 38 |
| | | | | | | | | | | *.1* | *.8* | | | *1.7* | | *1.9* | | (*) | | 4.8 | 55.5 | 31.2 | 102.3 | 100.1 | |
| | | | | | | | | | | *.1* | *.7* | | | (*) | | | 2.3 | *1.7* | | *2.0* | *2.0* | *1.5* | *.9* | *1.0* | 39 |
| | | | | | | | | | | (*) | *.4* | | | *.1* | | | *2.2* | *1.1* | | | | | | | |
| .2 | | | 3.3 | .3 | .2 | | .4 | | .2 | .6 | | | (*) | | | .2 | | | .8 | | 37.6 | 50.3 | 100.0 | 100.0 | |
| *.7* | | | *4.5* | *.5* | *.5* | | *2.7* | | *.5* | *.8* | | | *.6* | | | *1.0* | | | | *4.3* | *6.5* | *2.8* | *3.1* | 40 |

Italics = percentages of the net totals of the rows (net total outlays = input). These are based on the corresponding actual figures. (Unit = 1 percent.) Asterisks (*) indicate percentages of less than $\frac{1}{2}$ of 1 percent. The net total outlays percentages (row 46) sometimes vary from 100 percent, because for checking purposes they were derived by adding all the percentage figures (italics) in the corresponding column (excluding the distribution percentage of any industry from itself; e. g., to 1 from 1, to 2 from 2, etc.).

TABLE I.A.—*Quantitative input and output relations in the economic system*

(Unit =

| | | Agriculture | Flour and grist mill products | Canning and preserving | Bread and bakery products | Sugar, glucose, and starch | Liquors and beverages | Tobacco manufactures | Slaughtering and meat packing | Butter, cheese, etc. | Other food industries | Iron mining | Blast furnaces | Steel works and rolling mills | Other iron and steel and electric manufactures | Automobiles | Nonferrous metal mining | Smelting and refining | Brass, bronze, copper, etc., manufactures | Nonmetal minerals | Petroleum and natural gas | Refined petroleum |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| 41 | Transportation (steam railroads). | 11.1 | 1.3 | .5 | ..... | .5 | .1 | (*) | 1.4 | .4 | .1 | 1.4 | .2 | 3.3 | 1.5 | 2.9 | .3 | .2 | .1 | 4.2 | .4 | 5.4 |
| | | *7.5* | *5.0* | *3.7* | ..... | *4.3* | *1.5* | *.2* | *2.7* | *2.1* | *.3* | *39.7* | *1.8* | *6.9* | *.8* | *4.5* | *4.4* | *1.1* | *.3* | *12.7* | *1.3* | *11.2* |
| 42 | Imports | 1.0 | .8 | .3 | .3 | 6.2 | (*) | 2.1 | 1.3 | .2 | 8.1 | ..... | .5 | 1.8 | .4 | ..... | ..... | 2.9 | 1.6 | .5 | ..... | 1.9 |
| | | *.5* | *2.2* | *1.7* | *1.0* | *36.7* | *.6* | *8.1* | *1.8* | *.7* | *23.8* | ..... | *3.2* | *2.8* | *.2* | ..... | ..... | *15.2* | *6.5* | *1.1* | ..... | *3.0* |
| 43a | Wages and salaries | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| | | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 43b | Capital and entrepreneurial services. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| | | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 43c | Total services | 9.3 | .2 | .3 | .7 | .1 | .2 | .4 | .4 | .2 | .5 | .2 | .1 | 1.5 | 7.8 | 1.9 | .4 | .1 | .4 | 1.4 | .7 | .9 |
| | | *67.4* | *9.0* | *21.2* | *30.3* | *12.2* | *41.5* | *19.5* | *9.0* | *11.7* | *19.8* | *36.3* | *10.3* | *33.8* | *45.0* | *31.9* | *60.7* | *10.9* | *25.4* | *44.0* | *25.3* | *20.1* |
| | Undistributed: | | | | | | | | | | | | | | | | | | | | | |
| 44a | Taxes | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| | | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 44b | Other | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| | | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 44c | Total | 1.0 | 1.4 | .5 | 1.0 | .6 | .2 | 1.6 | 1.5 | .2 | 1.0 | .2 | .4 | 1.7 | 8.1 | 2.3 | .2 | .5 | .5 | 1.4 | 2.3 | .6 |
| | | *5.0* | *37.5* | *25.7* | *30.5* | *36.5* | *26.4* | *60.6* | *21.0* | *10.0* | *28.6* | *25.0* | *23.3* | *26.5* | *32.0* | *26.7* | *19.7* | *25.5* | *19.0* | *39.6* | *54.3* | *9.6* |
| 45 | Gross total outlays | 6.1 | .7 | .4 | .7 | .3 | .1 | .5 | 1.6 | .5 | .7 | .1 | .3 | 1.5 | 5.4 | 2.3 | .2 | .6 | .5 | .9 | .9 | 1.3 |
| | | *154.2* | *101.6* | *100.0* | *100.0* | *101.8* | *101.5* | *100.0* | *110.4* | *100.0* | *105.8* | *100.0* | *100.0* | *117.6* | *110.3* | *135.7* | *100.4* | *136.1* | *105.3* | *106.8* | *103.6* | *103.8* |
| 46 | Net total outlays | 4.4 | .8 | .4 | .7 | .4 | .1 | .6 | 1.6 | .5 | .8 | .1 | .4 | 1.4 | 5.5 | 1.9 | .2 | .4 | .6 | 1.0 | .9 | 1.4 |
| | | *100.1* | *100.2* | *100.0* | *99.9* | *99.9* | *99.9* | *99.9* | *99.8* | *99.9* | *100.1* | *100.0* | *99.9* | *100.0* | *100.0* | *99.9* | *100.0* | *100.0* | *99.9* | *99.9* | *99.9* | *100.0* |

TABLE I.—*Quantitative input and output relations*

[Unit =

| | | Agriculture | Flour and grist mill products | Canning and preserving | Bread and bakery products | Sugar, glucose, and starch | Liquors and beverages | Tobacco manufactures | Slaughtering and meat packing | Butter, cheese, etc. | Other food industries | Iron mining | Blast furnaces | Steel works and rolling mills | Other iron and steel and electric manufactures | Automobiles | Nonferrous metal mining | Smelting and refining | Brass, bronze, copper, etc., manufactures | Nonmetal minerals | Petroleum and natural gas | Refined petroleum |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| 1 | Agriculture | 5,346 | 793 | 255 | 41 | 66 | 14 | 125 | 2,193 | 802 | 227 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 2 | Flour and grist mill products | 666 | 24 | ..... | 325 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 3 | Canning and preserving | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 4 | Bread and bakery products | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 5 | Sugar, glucose, and starch | 7 | ..... | 45 | 53 | 15 | 15 | ..... | ..... | 37 | 115 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 6 | Liquors and beverages | ..... | ..... | ..... | ..... | ..... | 5 | ..... | ..... | ..... | 9 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 7 | Tobacco manufactures | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 8 | Slaughtering, and meat packing | 3 | ..... | ..... | 70 | ..... | ..... | ..... | 372 | 4 | 8 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 9 | Butter, cheese, etc | ..... | ..... | ..... | 41 | ..... | ..... | ..... | ..... | ..... | 40 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 10 | Other food industries | ..... | ..... | ..... | 28 | ..... | 20 | ..... | ..... | ..... | 98 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 11 | Iron mining | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 284 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 12 | Blast furnaces | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 656 | 137 | 9 | ..... | ..... | ..... | ..... | ..... | ..... |
| 13 | Steel works and rolling mills | 25 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 | 3 | 559 | 1,509 | 365 | 5 | ..... | ..... | 1 | 239 | ..... |
| 14 | Other iron and steel and electric manufacturers | 464 | 8 | 79 | 21 | 1 | 16 | 4 | 7 | 21 | 15 | 4 | ..... | 20 | 1,274 | 548 | 20 | ..... | 18 | 40 | 159 | 15 |
| 15 | Automobiles | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1,445 | ..... | ..... | ..... | ..... | ..... | ..... |
| 16 | Nonferrous metal mining | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 2 | 411 | ..... | ..... | ..... | ..... |
| 17 | Smelting and refining | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 18 | 95 | 3 | ..... | 532 | 472 | (*) | ..... | ..... |
| 18 | Brass, bronze, copper, etc., manufacturers | ..... | ..... | ..... | ..... | ..... | ..... | 8 | ..... | ..... | 8 | ..... | ..... | 24 | 492 | 111 | ..... | ..... | 66 | ..... | ..... | ..... |
| 19 | Nonmetal minerals | 10 | ..... | 38 | ..... | 1 | 20 | ..... | ..... | ..... | ..... | ..... | 27 | 2 | 31 | 61 | ..... | (*) | ..... | 149 | ..... | ..... |
| 20 | Petroleum and natural gas | ..... | (*) | (*) | 3 | 1 | (*) | (*) | 2 | (*) | 1 | ..... | (*) | 16 | 9 | 1 | ..... | 2 | 1 | 23 | 75 | 1,647 |
| 21 | Refined petroleum | 35 | 1 | 1 | 2 | 2 | 1 | (*) | 1 | 1 | 1 | (*) | (*) | 38 | 27 | 6 | 4 | 7 | 5 | 17 | ..... | 124 |
| 22 | Coal | ..... | 3 | 3 | 7 | 11 | 3 | 1 | 12 | 7 | 6 | 3 | 2 | 74 | 63 | 11 | 5 | 11 | 5 | 85 | ..... | 8 |
| 23 | Coke | ..... | (*) | (*) | 4 | 1 | (*) | (*) | (*) | (*) | (*) | (*) | 188 | 27 | 22 | 1 | (*) | 5 | 1 | 1 | ..... | 8 |
| 24 | Manufactured gas | ..... | (*) | (*) | 4 | (*) | (*) | (*) | 1 | (*) | 2 | ..... | 1 | ..... | 16 | 2 | ..... | (*) | 1 | 2 | ..... | ..... |
| 25 | Electric utilities | ..... | 11 | 2 | 11 | (*) | 2 | 1 | 8 | 4 | 11 | 5 | 1 | 32 | 90 | 20 | 14 | 7 | 9 | 53 | ..... | 7 |
| 26 | Chemicals | 394 | ..... | ..... | ..... | ..... | 4 | ..... | 101 | 2 | 8 | 7 | ..... | ..... | 43 | 34 | 9 | ..... | 52 | 25 | 2 | 18 |
| 27 | Lumber and timber products | 244 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 2 | ..... | ..... | 34 | 58 | 8 | ..... | ..... | ..... | ..... | ..... |
| 28 | Other wood products | ..... | ..... | ..... | ..... | ..... | ..... | 12 | ..... | ..... | ..... | ..... | ..... | ..... | 88 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 29 | Paper and wood pulp | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 30 | Other paper products | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 31 | Printing and publishing | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

[1] This table was prepared by Wassily W. Leontief as part of a larger study financed by the Harvard University Committee on Research in the Social Sciences. For the method employed and similar tables for 1919, see "Quantitative Input and Output Relations In the Economic System of the United States" by W. Leontief, in the "Review of Economic Statistics" August 1936.

*of the United States, 1929: Percentage distribution*—Continued

1 percent)

| Coal | Coke | Manufactured gas | Electric utilities | Chemicals | Lumber and timber products | Other wood products | Paper and wood pulp | Other paper products | Printing and publishing | Yarn and cloth | Clothing | Other textile products | Leather tanning | Leather shoes | Other leather products | Rubber manufactures | Industries, n.e.s. | Construction | Transportation (steam railroads) | Exports | Consumption | Undistributed | Gross total output | Net total output | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | |
| 14.9 | 6 | ---- | ---- | 1.7 | 4.9 | .3 | .6 | (*) | | .1 | | (*) | * | | | .2 | | | | 1.1 | 14.3 | 25.9 | 100.0 | 99.9 | 41 |
| *42.8* | *8.0* | ---- | ---- | .1 | *16.0* | *1.7* | *3.7* | *.4* | | *.2* | | *.1* | *.4* | | | *1.1* | | | | *1.4* | *1.5* | *3.2* | *2.6* | *3.1* | |
| | | | | *.1* | *5.8* | *.9* | *2.4* | | *3.4* | *5.2* | *3.7* | *1.7* | *3.1* | *.7* | *.1* | *5.0* | *.7* | *.5* | (*) | | *16.9* | *8.0* | *100.0* | *100.0* | 42 |
| | | | | *.1* | *8.9* | *2.2* | *2.8* | | *11.1* | *5.9* | *16.5* | *17.2* | *14.0* | *28.6* | *8.3* | *1.5* | *21.3* | *1.5* | (*) | | *1.4* | *.7* | *2.0* | *2.3* | |
| | | | | | | | | | | | | | | | | | | | | | | | | | 43a |
| | | | | | | | | | | | | | | | | | | | | | | | | | 43b |
| 1.4 | .1 | .3 | 4.2 | 1.4 | 1.1 | .8 | .4 | .3 | 2.0 | 2.1 | 1.4 | .2 | .1 | .5 | .1 | .5 | 1.3 | 4.3 | .5 | | 19.7 | 41.6 | 119.8 | 100.1 | 43c |
| *41.5* | *14.3* | *40.5* | *58.1* | *27.2* | *89.9* | *36.0* | *29.1* | *30.7* | *46.7* | *32.8* | *27.7* | *24.3* | *17.1* | *36.0* | *29.8* | *28.8* | *39.1* | *42.7* | *52.1* | | *23.0* | *59.2* | *34.2* | *32.0* | |
| | | | | | | | | | | | | | | | | | | | | | | | | | 44a |
| | | | | | | | | | | | | | | | | | | | | | | | | | 44b |
| .5 | .2 | .1 | .2 | .3 | 1.5 | 1.2 | .8 | .4 | 1.7 | 2.4 | 1.8 | .1 | .3 | .6 | .1 | .8 | 2.4 | 1.7 | 2.1 | .1 | 47.8 | | 100.0 | 99.8 | 44c |
| *9.7* | *20.3* | *3.4* | *21.2* | *1.8* | *35.1* | *36.1* | *37.8* | *25.5* | *28.8* | *25.7* | *25.0* | *6.1* | *27.4* | *30.3* | *25.1* | *33.8* | *50.3* | *11.7* | *14.3* | *1.4* | *8.0* | | *19.4* | *21.8* | |
| .0 | 2.1 | | 1.6 | | 1.0 | .6 | .5 | .3 | 1.3 | 2.1 | 1.5 | .2 | .2 | .5 | 1 | .5 | .9 | 2.9 | 2.9 | 2.1 | 30.1 | 21.5 | 100.0 | | 45 |
| *100.8* | *100.8* | *101.8* | *101.0* | *102.4* | *126.5* | *101.3* | *121.3* | *100.0* | *113.8* | *115.0* | *105.4* | *100.0* | *100.0* | *119.5* | *101.3* | *161.9* | *102.2* | *100.0* | *100.0* | *196.0* | *124.0* | *100.0* | *100.0* | | |
| 1.0 | .2 | .2 | 2.3 | 1.7 | .9 | .7 | .5 | .3 | 1.3 | 2.1 | 1.6 | .3 | .2 | .4 | .1 | .5 | 1.0 | 3.2 | 3.2 | 2.3 | 27.4 | 24.1 | | 99.6 | 46 |
| 100.0 | 99.9 | 100.1 | 100.0 | 99.9 | 99.9 | 99.9 | 99.9 | 100.0 | 99.9 | 99.9 | 100.0 | 99.9 | 100.0 | 100.0 | 100.1 | 100.1 | 99.8 | 100.0 | 100.0 | 100.0 | 100.0 | 94.8 | .... | 99.9 | |

*in the economic system of the United States, 1929* [1]

Million dollars]

| Coal | Coke | Manufactured gas | Electric utilities | Chemicals | Lumber and timber products | Other wood products | Paper and wood pulp | Other paper products | Printing and publishing | Yarn and cloth | Clothing | Other textile products | Leather tanning | Leather shoes | Other leather products | Rubber manufactures | Industries, n.e.s. | Construction | Transportation (steam railroads) | Exports | Consumption | Undistributed | Gross total output | Net total output | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | |
| -- | -- | -- | -- | 196 | 48 | 5 | 17 | -- | -- | 623 | -- | -- | 4 | -- | -- | -- | -- | -- | -- | 1,194 | 3,281 | 259 | 15,488 | 10,142 | 1 |
| -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 105 | 645 | 10 | 1,775 | 1,751 | 2 |
| -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 100 | 713 | 51 | 864 | 864 | 3 |
| -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3 | 1,556 | 14 | 1,573 | 1,573 | 4 |
| -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 21 | 479 | 44 | 846 | 821 | 5 |
| -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4 | 283 | -- | 301 | 296 | 6 |
| -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 19 | 1,226 | 5 | 1,250 | 1,250 | 7 |
| -- | -- | -- | -- | 60 | -- | -- | -- | -- | -- | 20 | -- | -- | 112 | -- | -- | -- | -- | -- | -- | 204 | 2,938 | 133 | 3,924 | 3,552 | 8 |
| -- | -- | -- | -- | -- | -- | -- | 3 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 17 | 1,014 | 22 | 1,137 | 1,137 | 9 |
| -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 14 | 1,534 | 50 | 1,744 | 1,646 | 10 |
| -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5 | -- | 1 | 290 | 290 | 11 |
| -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2 | -- | 1 | -- | 10 | 815 | 815 | 12 |
| 4 | -- | -- | -- | -- | -- | 10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6 | 84 | 200 | 155 | 9 | 411 | 3,586 | 3,027 | 13 |
| 11 | -- | 12 | 538 | 4 | 38 | 34 | 31 | 5 | 52 | 114 | 16 | 2 | -- | 12 | 11 | 11 | 33 | 1,402 | 1,570 | 807 | 1,151 | 1,181 | 12,865 | 11,591 | 14 |
| -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 532 | 2,926 | 551 | 5,454 | 4,909 | 15 |
| -- | -- | -- | -- | 2 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1 | -- | 41 | 457 | 455 | 16 |
| -- | -- | -- | -- | 49 | -- | -- | -- | -- | 2 | -- | -- | 1 | -- | -- | -- | 7 | -- | 6 | -- | 158 | -- | 119 | 1,402 | 930 | 17 |
| -- | -- | -- | 47 | 11 | -- | -- | -- | -- | 5 | -- | -- | -- | -- | -- | -- | -- | 26 | 35 | -- | 76 | 110 | 236 | 1,255 | 1,189 | 18 |
| -- | -- | -- | 16 | 85 | -- | -- | 13 | -- | -- | -- | -- | (*) | 1 | -- | -- | 1 | 10 | 1,180 | 28 | 73 | 149 | 352 | 2,247 | 2,098 | 19 |
| -- | (*) | 2 | 22 | 7 | (*) | (*) | 1 | (*) | 1 | (*) | -- | (*) | (*) | (*) | (*) | (*) | 2 | -- | -- | 38 | 192 | 85 | 2,131 | 2,056 | 20 |
| (*) | 1 | 34 | 16 | 9 | 3 | (*) | 4 | (*) | 1 | 9 | (*) | (*) | (*) | (*) | (*) | 1 | 15 | 32 | 95 | 523 | 1,151 | 901 | 3,073 | 2,949 | 21 |
| 15 | 268 | 51 | 158 | 40 | 6 | (*) | 16 | 2 | 3 | 10 | 2 | 1 | 5 | 2 | (*) | (*) | 9 | -- | 301 | 98 | 677 | 280 | 2,342 | 2,327 | 22 |
| (*) | 4 | 20 | -- | 39 | (*) | (*) | (*) | (*) | (*) | (*) | (*) | (*) | (*) | (*) | (*) | (*) | (*) | -- | -- | 23 | 55 | 65 | 364 | 460 | 23 |
| -- | -- | * | -- | 6 | (*) | (*) | (*) | (*) | 2 | 1 | 1 | (*) | (*) | (*) | (*) | (*) | 1 | -- | -- | -- | 372 | 67 | 481 | 473 | 24 |
| 37 | 2 | 4 | 207 | 41 | 10 | 8 | 22 | 4 | 18 | 54 | 10 | 2 | 2 | 4 | 1 | 10 | 31 | -- | 6 | -- | 2,196 | 1,521 | 4,478 | 4,271 | 25 |
| 20 | -- | -- | -- | 280 | 17 | -- | 14 | -- | 41 | 192 | -- | -- | 10 | -- | -- | 13 | 2 | 59 | -- | 219 | 1,026 | 1,186 | 3,778 | 3,398 | 26 |
| 35 | -- | -- | 37 | 12 | 544 | 255 | 8 | -- | -- | -- | -- | -- | -- | 2 | 1 | -- | 15 | 306 | 158 | 149 | 1 | 612 | 2,481 | 1,937 | 27 |
| -- | -- | -- | -- | -- | -- | 20 | -- | -- | -- | 6 | -- | -- | -- | 7 | -- | -- | -- | (*) | -- | 31 | 836 | 196 | 1,496 | 1,476 | 28 |
| -- | -- | -- | -- | -- | -- | -- | 232 | 300 | 271 | (*) | -- | -- | -- | -- | -- | -- | 20 | 20 | -- | 25 | 61 | 311 | 1,273 | 1,041 | 29 |
| -- | -- | -- | -- | -- | -- | -- | -- | -- | 35 | (*) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 12 | 93 | 549 | 690 | 690 | 30 |
| -- | -- | -- | -- | -- | -- | -- | -- | -- | 102 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 20 | 26 | 692 | 2,013 | 3,159 | 2,757 | 31 |

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NOTE.—Asterisks indicate a quantity of less than half a million dollars.

*Quantitative input and output relations in the eco*

[Unit=

| | | Agriculture | Flour and grist mill products | Canning and preserving | Bread and bakery products | Sugar, cheese, and starch | Liquors and beverages | Tobacco manufactures | Slaughtering and meat packing | Butter, cheese, etc. | Other food industries | Iron mining | Blast furnaces | Steel works and rolling mills | Other iron and steel and electric manufactures | Automobiles | Nonferrous metal mining | Smelting and refining | Brass, bronze, copper, etc., manufactures | Nonmetal minerals | Petroleum and natural gas | Refined petroleum |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| 32 | Yarn and cloth | 20 | | | | | | | | | | | | | 5 | 19 | | | | | | |
| 33 | Clothing | | | | | | | | | | | | | | | | | | | | | |
| 34 | Other textile products | | | | | | | | | | | | | | | | | | | | | |
| 35 | Leather tanning | | | | | | | | | | | | | | | 9 | | | | | | |
| 36 | Leather shoes | | | | | | | | | | | | | | | | | | | | | |
| 37 | Other leather products | 23 | | | | | | | | | | | | | | | | | | | | |
| 38 | Rubber manufactures | 11 | | | | | | | | | | | | | 8 | 266 | | | | | | |
| 39 | Industries, n. e. s | 39 | | | | | | | | | | | | | 10 | 17 | | | | | | |
| 40 | Construction | | 7 | 6 | 17 | 4 | 4 | | 11 | 4 | 15 | 2 | 5 | 49 | 55 | 41 | 8 | 7 | 41 | 9 | | 117 |
| 41 | Transportation (steam railroads) | 741 | 88 | 33 | | 36 | 5 | 3 | 96 | 24 | 5 | 92 | 15 | 220 | 102 | 194 | 21 | 10 | 4 | 280 | 28 | 363 |
| 42 | Imports | 50 | 39 | 15 | 16 | 309 | 2 | 106 | 65 | 8 | 403 | | 27 | 90 | 20 | (*) | | 144 | 81 | 24 | | 96 |
| 43a | Wages and salaries | 955 | 93 | 109 | 332 | 51 | 60 | 118 | 248 | 57 | 216 | 47 | 54 | 792 | 4,226 | 871 | 149 | 69 | 227 | 681 | 405 | 173 |
| 43b | Capital and entrepreneurial services | 5,699 | 67 | 82 | 164 | 52 | 77 | 137 | 74 | 80 | 120 | 62 | 32 | 283 | 1,347 | 496 | 141 | 34 | 89 | 290 | 125 | 478 |
| 43c | Total services | 6,654 | 160 | 191 | 496 | 103 | 137 | 255 | 322 | 137 | 336 | 109 | 86 | 1,075 | 5,573 | 1,367 | 290 | 103 | 316 | 971 | 530 | 651 |
| | Undistributed: | | | | | | | | | | | | | | | | | | | | | |
| 44a | Taxes | 489 | | | | | | | | | | | | | | | | | | | | |
| 44b | Other | | | | | | | | | | | | | | | | | | | | | |
| 44c | Total | 489 | 665 | 231 | 500 | 307 | 87 | 794 | 751 | 117 | 485 | 75 | 194 | 844 | 3,970 | 1,146 | 94 | 242 | 236 | 674 | 1,135 | 310 |
| 45 | Gross total outlays | 15,221 | 1,799 | 809 | 1,639 | 857 | 335 | 1,309 | 3,942 | 1,168 | 1,792 | 300 | 833 | 3,744 | 13,667 | 5,734 | 480 | 1,481 | 1,308 | 2,354 | 2,168 | 3,364 |
| 46 | Net total outlays | 9,875 | 1,775 | 809 | 1,639 | 842 | 330 | 1,309 | 3,570 | 1,168 | 1,694 | 300 | 833 | 3,185 | 12,393 | 4,289 | 478 | 949 | 1,242 | 2,205 | 2,093 | 3,240 |

***nomic system of the United States, 1929*—Continued**

Million dollars

| Coal | Coke | Manufactured gas | Electric utilities | Chemicals | Lumber and timber products | Other wood products | Paper and wood pulp | Other paper products | Printing and publishing | Yarn and cloth | Clothing | Other textile product | Leather tanning | Leather Shoes | Other leather products | Rubber manufactures | Industries, n.e.s. | Construction | Transportation (Steam railroads) | Exports | Consumption | Distributed | Gross total output | Net total output | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | |
| | | | | | | 11 | 15 | (*) | 6 | 690 | 1,363 | 331 | | 23 | 1 | 109 | 37 | 2 | | 178 | 1,885 | 180 | 5,181 | 4,491 | 2 |
| | | | | | | | | | | | 302 | | | | | | | | | 15 | 3,413 | 84 | 3,514 | 3,512 | 34 |
| | | | | | | 25 | | | 3 | 33 | 82 | | | | 8 | | (*) | | | 16 | 172 | 234 | 595 | 595 | 34 |
| | | | | 25 | | 6 | | | 4 | | 12 | | 2 | 236 | 94 | | 2 | | | 43 | 35 | 62 | 530 | 528 | 35 |
| | | | | | | | | | | | | | | 195 | | | | | | 12 | 951 | | 1,158 | 963 | 36 |
| | | | | | | | | | | | | | | 17 | 3 | | | | | 6 | 181 | 54 | 267 | 264 | 37 |
| | | | | | | | | | | 3 | 10 | | | 17 | | 22 | | 1 | | 77 | 513 | 202 | 1,130 | 1,108 | 38 |
| | | | | | | | | | | 2 | 16 | | | 1 | | | 54 | 102 | | 104 | 1,213 | 683 | 2,238 | 2,187 | 39 |
| 17 | | | 233 | 20 | 11 | | 29 | | 16 | 39 | | | 3 | | | 12 | | | 78 | | 2,623 | 3,508 | 6,971 | 6,971 | 40 |
| 991 | 38 | | | 110 | 328 | 20 | 40 | 3 | | 7 | | 3 | 2 | | | 13 | | | | 73 | 950 | 1,728 | 6,666 | 6,666 | 41 |
| | | | 4 | 338 | 16 | 14 | 121 | | 171 | 770 | 186 | 86 | 153 | 34 | 1 | 250 | 35 | 27 | 1 | | 812 | 402 | 4,997 | 4,997 | 42 |
| 885 | 42 | 101 | 1,603 | 550 | 697 | 174 | 222 | 165 | 1,134 | 1,276 | 819 | 112 | 70 | 294 | 70 | 263 | 690 | 2,620 | 2,459 | | 6,078 | 21,115 | 32,581 | 45,603 | 43a |
| 88 | 26 | 108 | 1,393 | 175 | 121 | 83 | 94 | 55 | 317 | 237 | 175 | 37 | 14 | 65 | 10 | 76 | 217 | 450 | 1,327 | | 7,175 | 10,888 | 33,389 | 26,194 | 43b |
| 973 | 68 | 209 | 2,996 | 1,025 | 818 | 557 | 316 | 220 | 1,451 | 1,513 | 994 | 149 | 84 | 359 | 80 | 339 | 907 | 3,079 | 3,786 | | 14,153 | 32,003 | 85,959 | 71,797 | 43c |
| | | | | | | | | | | | | | | | | | | | | | | | | | 44a |
| | | | | | | | | | | | | | | | | | | | | | | | | | 44b |
| 227 | 97 | 179 | 1,093 | 1,691 | 725 | 564 | 407 | 183 | 835 | 1,186 | 806 | 39 | 149 | 302 | 68 | 398 | 1,167 | 822 | 1,043 | 73 | 23,346 | | 48,836 | 48,836 | 44c |
| 2,360 | 478 | 524 | 5,367 | 4,050 | 2,594 | 1,569 | 1,319 | 717 | 3,420 | 5,296 | 3,893 | 614 | 536 | 1,193 | 271 | 1,198 | 2,370 | 7,219 | 7,272 | 5,230 | 75,036 | 54,075 | 251,302 | | 45 |
| 2,345 | 474 | 516 | 5,160 | 3,770 | 2,050 | 1,549 | 1,087 | 717 | 2,918 | 4,036 | 3,588 | 614 | 534 | 908 | 298 | 1,176 | 2,319 | 7,219 | 7,272 | 5,230 | 61,193 | 54,075 | ..... | 224,286 | 46 |

# APPENDIX 18.—SUPPORTING STATISTICS AND METHODS OF DERIVING CERTAIN TABLES AND CHARTS IN THE REPORT[1]

The purpose of this appendix is to present in one convenient place the data, sources, and description of the methods used in deriving the data supporting certain tables and charts presented in the body of the report. In some cases the materials given in the text required extensive discussion and supporting statistics, and in such cases a separate appendix was written to cover them. In other cases a single reference was sufficient to indicate the source. The cases requiring more than a reference but not justifying a separate appendix are brought together in this appendix. The order of the materials corresponds to the order in which they are discussed in the text.

## 1. Estimate of the Amount of Food Stored in New York City

In chapter I an estimate is given of the food supply in the metropolitan area of New York. A conditional estimate of the amount of food stored in New York City may be made for the end of the year 1929 from data published by the Bureau of the Census. The estimate was made as follows: Total sales by retail stores "in the food group" and for the classification "restaurants, cafeterias, and eating places" were added to sales by wholesalers in the same classification to ultimate consumers at regular retail prices. The figures are shown in table I.

TABLE I.—*Retail sales of food in New York City for the year 1929*

[Millions of dollars]

| | |
|---|---|
| By retailers: | |
| Food group (not elsewhere classified) | $1,062.3 |
| Restaurants, cafeterias, and eating places | 345.4 |
| By wholesalers (at retail prices): | |
| Food group (not elsewhere classified) | 12.8 |
| Groceries and food specialties | 6.4 |
| Total retail sales of food | 1,426.9 |

Source: *Fifteenth Census of the United States*, wholesale figures from Vol. II, *Wholesale Distribution*, p. 1007, et. seq.; retail figures from Vol. I, *Retail Distribution, part 3*, p. 215, et. seq.

From the same source, estimates of value of stocks on hand were made, value of wholesalers' stocks were marked up 10 percent and added to value of retailers' stocks; this total was then marked up 20 percent in order to get an estimate of the value of stocks in terms of consumers' prices. Computations are shown in table II.

[1] Appendix 18 was prepared by Louis J. Paradiso, assisted by Grace W. Knott, Paul H. Fischer, Ezra Glaser and James Arnold. Marion Tolles also assisted in the preliminary research in connection with section 5 on wealth.

TABLE II.—*Value of stocks of food in New York City on December 31, 1929*

[Millions of dollars]

| | | |
|---|---|---|
| Wholesaler's stocks: | | |
| Food products not elsewhere classified | $33.3 | |
| Groceries and food specialties | 93.2 | |
| Total at cost to wholesaler | 126.5 | |
| Plus 10-percent mark-up [1] | 12.7 | |
| Wholesaler's stocks at prices to retailers | | $139.2 |
| Retailer's stocks: | | |
| Food group | 46.5 | |
| Restaurants, cafeterias, and eating places | 4.6 | |
| Total at cost to retailer | | 51.1 |
| Total stocks | | 190.3 |
| Plus 20-percent mark-up [1] | | 38.1 |
| Total food stocks at prices to consumers | | 228.4 |

[1] These percentages are rough estimates covering sales of all foods assuming all sales went through food stores rather than restaurants. They are in agreement with the preliminary estimates obtained by the Department of Commerce investigations into average wholesale and retail mark-up in New York City.

Source: *Fifteenth Census of the United States*, wholesale figures from Vol. II, *Wholesale Distribution*, p. 1007, et. seq.; retail figures from Vol. I, *Retail Distribution*, part 3, p. 215, et. seq.

Total sales for the year 1929 were 1,426.9 millions of dollars, and the value of food stocks at prices to consumers held at the end of the year were, roughly, 228.4 millions of dollars. Thus, 16 percent of the year's sales were held in stocks at the date the survey was made. This is equivalent to about 58 days' or approximately 2 months' supply of food on hand.

Approximately the same result was obtained by making use of the findings of a report by the Port of New York Authority called *Food Supply of the Port of New York District* for the metropolitan district in 1922. The length of time of the supply for the various items of food given in this report varied from meat, of which there was only a week's supply in storage, to eggs, of which there was at most a 3 months' supply. On the average, it was found by a study of the detailed items that a 45 days' supply of food was on hand in the New York metropolitan district in 1922.

The estimate of a 2 months' supply is a conservative one in view of the fact that there is such a great variation in the supply of specific food items. Milk is shipped in daily and fresh eggs and meat at short intervals. Canned goods and packaged fancy groceries on the other hand might be stored in wholesalers' warehouses for long periods. Furthermore, the supply of some specific commodities varies greatly with the season

of the year, so that the estimate of the food supply on hand would be different for the different months of the year.

## 2. Loss in Potential Real National Income Due to Depression Unemployment of Men and Machines, 1930–37

In chart 1 of chapter 1, real national income produced in the United States is shown for the years of the period 1920 to 1937. The line showing potential real national income was obtained by connecting with a compound interest curve the average real national income produced for the years of the period 1923–29 (this average being centered at 1926) with an estimated real national income that could have been expected in 1938 at practical full employment. For the purposes of this chart, practical full employment in 1938 was assumed to correspond to a residual unemployment of 2 millions, using an estimated labor force in 1938 of 54.5 millions.[2] The estimated potential real national income in 1938 corresponding to practical full employment is 103.2 billions of 1929 dollars. This figure was derived from total employment calculated at different assumed levels of consumer income shown in table II of the report *Patterns of Resource Use*, National Resources Committee. The index of industrial production corresponding to a residual unemployment of 2 millions was interpolated from table II of the Pattern report to be approximately 147. The real national income produced corresponding to the index of industrial production of 147 was calculated from the following relationship:

$$\underset{\text{(Billions of 1929 dollars)}}{\text{National income produced}} = 1.608\ (1.0064)^{\text{year}-1920} \times (\text{industrial production})^{0.8226}$$

(industrial production) (1923–25 = 100)

This relationship was derived by the method of least squares, using the logarithmic form, from the data on real national income given in the table below and the Federal Reserve Board index of industrial production for the years of the period 1921 to 1937. The average percent residual[3] for the years of the entire period is 1.4 percent, thus indicating a fairly close relationship between real national income produced and industrial production.

The curve representing potential real national income, obtained by connecting the 1923–29 potential real national income with the calculated 1938 potential real national income, is given by the following compound interest formula:

$$\underset{\text{(Billions of 1929 dollars)}}{\text{National income produced}} = 73.1\ (1.029)^{\text{year}-1926}.$$

[2] This estimate is based on a projection of unpublished data on labor force estimated by the National Research Project of the Works Progress Administration. For the data on labor force, see *Patterns of Resource Use*, National Resources Committee, 1938, appendix 2, table 1.

[3] The difference between real national income as calculated from the formula and the actual expressed as a percent of the calculated values.

Table III gives the data on real national income produced and the estimated loss in income due to depression unemployment of men and machines.

TABLE III.—*Loss in potential real national income due to depression unemployment of men and machines, 1930–37*

| Year | National income produced [1] (billions of current dollars) | Price of goods [2] (1929=100) | Real national income produced | Potential real national income [3] | Loss due to depression unemployment of men and machines [4] |
|---|---|---|---|---|---|
| | | | (Billions of 1929 dollars) | | |
| 1919 | 67.5 | 102.5 | 65.9 | | |
| 1920 | 68.1 | 118.1 | 57.7 | 61.0 | |
| 1921 | 50.7 | 103.9 | 48.8 | 63.0 | |
| 1922 | 58.7 | 97.2 | 60.4 | 65.2 | |
| 1923 | 68.0 | 99.9 | 68.1 | 67.0 | |
| 1924 | 67.9 | 99.9 | 68.0 | 68.9 | |
| 1925 | 72.8 | 102.0 | 71.4 | 71.0 | |
| 1926 | 74.9 | 102.7 | 72.9 | 73.1 | |
| 1927 | 73.8 | 100.9 | 73.1 | 75.2 | |
| 1928 | 77.6 | 99.8 | 77.8 | 77.4 | |
| 1929 | 81.1 | 100.0 | 81.1 | 79.8 | |
| 1930 | 68.3 | 97.3 | 70.2 | 82.0 | 11.8 |
| 1931 | 53.8 | 89.0 | 60.4 | 84.5 | 24.1 |
| 1932 | 40.0 | 80.1 | 49.8 | 86.9 | 37.1 |
| 1933 | 42.3 | 76.6 | 55.2 | 89.5 | 34.3 |
| 1934 | 50.1 | 79.8 | 62.8 | 92.3 | 29.5 |
| 1935 | 55.2 | 81.1 | 67.5 | 94.9 | 27.4 |
| 1936 | 63.5 | 82.8 | 76.7 | 97.7 | 21.0 |
| 1937 | 69.8 | 86.2 | 81.0 | 100.5 | 19.5 |
| Total loss [5] | | | | | 204.7 |

[1] From 1919–28 based on national income as given in *National Income and Capital Formation*, National Bureau of Economic Research, p. 8. This was made comparable to the Department of Commerce estimates (given in *Survey of Current Business*, June 1938) of national income produced by adjusting for net imputed rent, net government savings, depreciation, and changes in inventory.

[2] National Bureau of Economic Research, *Bulletin 59*: figures for later years furnished by the Bureau; based on prices of capital goods weighted by 1 and Bureau of Labor Statistics cost of living index weighted by 9.

[3] Based on the following compound interest curve obtained from the average of real national income produced for the years of the period 1923–29 (centered at 1926) and the estimate of potential national income in 1938 of 103.2 billions of 1929 dollars associated with a residual unemployment of 2 millions—see text for basis of calculation.

[4] Potential real national income less actual real national income produced.

[5] Due to depression unemployment of men and machines, 1930–37.

## 3. Major Items of Social Expenditures, 1935

The major items of social expenditures shown in chapter II, table IV, are as follows:

The figures for Federal Government expenditures were derived from the 1938 Budget of the United States (data for 1935–36). These expenditures were allocated to the functional break-down given below, excluding the items which did not fall into the categories used.

The figures for State governments were derived by the use of estimates in the report of the Twentieth Century Fund, *Studies in Current Tax Problems, 1937*, showing expenditures for certain functions for 1935–36. A large item "other" was allocated among the remaining functions on the basis of the ratios existing in 1932 as shown in the Census report, *Financial Statistics of States and Local Governments, 1932*.

The figures for local governments were derived by applying to the 1932 data for all local governments the percent changes from 1932 to 1936 shown in various expenditures of 39 large cities. The trend for these 39 cities showed the same relationship as shown for 94 cities between 1932 and 1935. Reports on the 94

cities cover approximately 60 percent of all local governments. The figures on local government expenditures are probably too low.

The following are the categories and sources used:

1. Education—includes expenditures for all schools, including books and supplies; and the promotion of education. The figure for private agencies' contribution to education represents the income received from endowments to institutions of higher learning as reported by the U. S. Office of Education for the school year 1935–36. Private and parochial schools are not included. Individual expenditures are the total expenditures of families and single individuals for education as shown in the National Resources Committee report, *Consumer Expenditures in the United States.*

2. Health and sanitation—includes expenditures for prevention and treatment of diseases; medical and dental work for school children; food regulation; sanitary inspection; and disposal plants. Individual expenditures are the total expenditures of families and single individuals for medical care as shown in the National Resources Committee report, *Consumer Expenditures in the United States.*

3. Recreation—includes expenditures for all recreational facilities, including parks, playgrounds, museums, including projects of the Works Progress Administration in these fields. Individual expenditures are the total expenditures of families and single individuals for recreation as shown in the National Resources Committee report, *Consumer Expenditures in the United States.*

4. Reading—includes expenditures for all libraries for use of the public; also payments to private library associations. Private agencies' contribution was derived as follows: The latest figure for total amount of endowments from individuals to libraries is for 1929. The Bureau of Library Service of the United States Office of Education furnished the figure of $95,820,560 as the amount of permanent endowment funds. A weighted yield on Treasury, municipal and corporate bonds in 1935 was calculated and applied to the amount of permanent endowments. Individual expenditures represent the amount of total expenditures made by families and single individuals for reading as shown by the National Resources Committee report, *Consumer Expenditures in the United States.*

5. Highways—includes all expenditures for operation and maintenance of public roads, bridges, etc., as reported by the Bureau of Public Roads, United States Department of Agriculture.

6. Charities, hospitals and corrections—includes administrative expenses for supervision of relief and of institutions; expenditures for general hospitals maintained by Federal, State, and local Governments (excluding those for care of insane and feeble-minded) and probation boards. This does not include payments to persons on relief or living expenses of persons in institutions. Private agencies' contribution was derived as follows: *The Final Report of the Committee on the Costs of Medical Care, 1932*, showed the source of funds for hospitals in 1929 which included an item of 54 million dollars derived from philanthropy. To this figure was added an estimated sum of 65 million dollars as contributions made through private relief agencies. According to a report of the Works Progress Administration, *Trends in Relief Expenditures, 1910–1935*, the total amount of public relief in 1935 amounted to approximately 2,300 million dollars. The ratio of private relief to public relief in 120 urban areas was 2 percent and in 385 rural towns, 4 percent. Weighting these ratios according to total population in urban and rural areas, a ratio of 2.9 percent was derived and applied to the total public expenditures. This figure for private agencies includes payments made to clients.

7. Interest payments—includes expenditures for interest payments on outstanding debt.

8. Churches—This figure represents the amount of gifts made by families and single individuals to churches in 1935–36, based on data from the National Resources Committee report, *Consumer Expenditures in the United States.* Part of the expenditures made by churches from these funds go to foreign missions. In addition to these funds churches derive income from endowments and real estate holdings. No data were available to permit an estimate of these amounts. It has been assumed that these two figures roughly offset one another. Part of contributions to churches go to support of schools and could properly be included under education.

### 4. Amount and Proportion of Goods and Services by Degree of Durability, 1919–35

In chart IX of chapter II and in subsequent chapters the values of goods and services are presented by years according to the degree of durability. The data on the value of goods were obtained directly from Kuznets, *Commodity Flow and Capital Formation.* The value of services was derived by the National Resources Committee. In this section a description of the method used for deriving the service series is given and a table is presented of the amount and proportion of goods and services by degree of durability.

The series on value of services was derived by estimating the value of services in current dollars and deflating the resulting series by a price index for services. The value of services in current dollars was computed from seven component series and the price index for services was calculated from a weighted average of seven price indexes.

The following series were used as components of the services series:

The first series consists of income produced by the segments included in the services to the consumer. These include private education, personal service, professional service, recreation and amusement, domestic service, and miscellaneous consumer services. The data for income produced for the years of the period 1929–37 were obtained from the United States Department of Commerce, Income Section. For the years of the period 1919–29, income originating from services was obtained from Kuznets, *National Income and Capital Formation, 1919–35*, page 67. These data were adjusted to the Department of Commerce series by the ratio of the two series in 1929.

The second series consists of income from residential telephone service. The data for the years of the period 1926–36 were derived from the Federal Communications Commission, *Third Annual Report*, and represent all types of operating income. For the period 1935–36, 61.3 percent of total operating revenue was from residential telephones. This percentage was assumed to hold for earlier years. The data for the years of the period 1919–25 were obtained by linear extrapolation along a trend line.

The third series is income from residential electric power service. This series was calculated by multiplying the rate per kilowatt-hour by total kilowatt-hours utilized by residential consumers. Rates per kilowatt-hour were computed from the Federal Power Commission, *Trends in Residential Rates, 1924–36*. Rates for 25, 100, and 250 kilowatt-hours were given weights of 7, 2, and 1, respectively, these weights being based on the relative importance of the quantities consumed. The data for the years 1919–23 were obtained by linear extrapolation along a trend line. The data for the years of the period 1926–36 on total kilowatt-hours consumed were obtained from the Edison Electric Institute, *Statistical Bulletin, No. 4*, New York, 1937. For the other years the data were based on Moody's *Public Utilities* and quoted from the *Electrical World*.

The fourth series is railway passenger revenue. Data were obtained from Interstate Commerce Commission, *Statistics of Railways in the United States*, 1936. Data for the year 1936 were obtained from Interstate Commerce Commission monthly statement, *Revenue Traffic Statistics of Class I Railways*, December 1936.

The fifth item is motor-bus revenue. The data for the years 1927–36 were derived from *Bus Transportation;* the data for the years 1919–26 were obtained by linear extrapolation along a trend line.

The sixth series is electric-railways revenue. This was computed from average fare (described below) multiplied by the number of passengers. The source for number of passengers for the years 1917, 1922, 1927, and 1932 is the census of *Street Railways* and for the intermediate years the source is the American Transit Association. These data are reported in Moody's *Public Utilities*.

The last series is revenue from private first-class mail. These data were obtained from the *Statistical Abstract of the United States* and based on the annual reports of the Postmaster General.

The above seven series were summated and the resulting series was deflated by a price index for services which was constructed from the following component series: (1) Index of price of services to the consumer, (2) residential telephone rates, (3) residential electric power rates, (4) railroad passenger rates, (5) motor bus rates, (6) electric railway rates, and (7) first-class mail rates. These various indexes of price were weighted by the following weights: 9722, 714, 600, 876, 350, 1149, and 627, respectively. These weights were based on the relative values of the various service items in 1929.

The following is the description of sources and methods used for getting the price series:

The index of price of services to the consumer is represented by the Bureau of Labor Statistics' cost of living for "miscellaneous," as reported in *Standard Statistics*, for the years of the period 1920–36. This series includes the cost of such items as reading materials, tobacco, organization dues, medical care, car fare, drugs, toilet articles, etc., but it excludes food, clothing, housing, fuel and lighting, and house furnishings. For the year 1919, the index was estimated from the percent change shown in the two years 1919 and 1920 by the National Industrial Conference Board's index of sundries, as reported in *Standard Statistics*, which is a component of the cost of living index computed by that organization.

Residential telephone rates were computed from data compiled by the Wisconsin Public Service Commission for the years of the period 1926–36.[4] For the years of the period 1919–25 the series was obtained by linear extrapolation along a trend line.

Residential electric power rates, railroad passenger rates, and motorbus rates were obtained from the same sources as the revenue series for the corresponding items. Residential electric power rates and motorbus rates were extrapolated along trend lines for those years for which data were not available.

Electric railway rates consist of an unweighted average of monthly cash fares for street railways or bus service in cities of 25,000 or more population. The number of cities was not constant—320 cities in 1932 and 268 cities in 1936. These data were compiled by the American Transit Association, formerly the American Street Railway Association, and published in the

[4] See appendix IV, table V, of this report

annual supplement of the *Survey of Current Business*, United States Department of Commerce.

Finally, the index of first-class mail rates covers local letters, nonlocal letters, and private cards, weighted by value in 1929 as follows: 103, 258, and 3, respectively. Data are published in the *Statistical Abstract of the United States* and from annual reports of the Postmaster General.

Table IV gives the value and price of services resulting from the procedure described above:

TABLE IV.—*Value of services, 1919–36*

| Year | Value in current dollars (millions) | Price of services (1929=100) | Value in 1929 dollars (millions) | Year | Value in current dollars (millions) | Price of services (1929=100) | Value in 1929 dollars (millions) |
|---|---|---|---|---|---|---|---|
| 1919 | 8,565 | 90.1 | 9,506 | 1928 | 13,475 | 99.5 | 13,543 |
| 1920 | 9,464 | 98.9 | 9,569 | 1929 | 14,038 | 100.0 | 14,038 |
| 1921 | 8,858 | 99.6 | 8,894 | 1930 | 13,044 | 100.7 | 12,953 |
| 1922 | 9,887 | 97.9 | 10,099 | 1931 | 11,268 | 99.2 | 11,358 |
| 1923 | 10,780 | 97.6 | 11,045 | 1932 | 9,072 | 97.9 | 9,266 |
| 1924 | 11,407 | 98.0 | 11,639 | 1933 | 8,509 | 95.9 | 8,872 |
| 1925 | 12,194 | 98.6 | 12,367 | 1934 | 9,403 | 95.0 | 9,898 |
| 1926 | 12,895 | 99.2 | 12,999 | 1935 | 10,162 | 95.1 | 10,686 |
| 1927 | 12,828 | 99.0 | 12,957 | 1936 | 11,187 | 94.5 | 11,838 |

Source: See description of method given above.

The amount and proportion of goods and services by degree of durability are presented in table V.

TABLE V.—*Amount and proportion of goods and services by degree of durability 1919–35*

[In millions of 1929 dollars]

| Year | Public works | Business construction | Producers, durable | Consumers, durable | Semi-durable | Non-durable | Services | Total |
|---|---|---|---|---|---|---|---|---|
| 1919 | 1,439 | 2,776 | 4,633 | 5,821 | 7,599 | 20,030 | 9,506 | 51,804 |
| 1920 | 1,275 | 2,476 | 4,735 | 5,707 | 6,616 | 21,143 | 9,569 | 51,521 |
| 1921 | 1,719 | 2,221 | 3,303 | 4,580 | 7,907 | 22,051 | 8,894 | 50,675 |
| 1922 | 2,020 | 2,973 | 3,858 | 5,819 | 8,954 | 22,827 | 10,099 | 56,550 |
| 1923 | 1,666 | 3,186 | 5,058 | 7,522 | 9,861 | 23,732 | 11,045 | 62,070 |
| 1924 | 2,022 | 3,408 | 4,838 | 7,873 | 9,173 | 25,576 | 11,639 | 64,529 |
| 1925 | 2,347 | 4,027 | 5,368 | 8,817 | 10,145 | 25,438 | 12,367 | 68,509 |
| 1926 | 2,306 | 4,325 | 5,761 | 9,752 | 10,212 | 26,635 | 12,999 | 71,990 |
| 1927 | 2,641 | 4,467 | 5,993 | 9,364 | 11,502 | 27,164 | 12,957 | 74,088 |
| 1928 | 2,871 | 4,391 | 6,083 | 9,555 | 11,513 | 27,156 | 13,543 | 75,112 |
| 1929 | 2,928 | 4,581 | 6,891 | 9,894 | 12,135 | 28,488 | 14,038 | 78,955 |
| 1930 | 3,120 | 3,884 | 5,791 | 7,875 | 10,892 | 27,970 | 12,953 | 72,485 |
| 1931 | 2,899 | 2,481 | 4,012 | 6,577 | 10,716 | 26,690 | 11,358 | 64,733 |
| 1932 | 2,440 | 1,332 | 2,601 | 4,704 | 9,742 | 26,342 | 9,266 | 56,427 |
| 1933 | 2,222 | 1,166 | 2,779 | 4,645 | 8,872 | 27,325 | 8,872 | 55,881 |
| 1934 | 2,950 | 1,403 | 3,714 | 5,259 | 9,206 | 26,920 | 9,898 | 59,350 |
| 1935 | 2,963 | 1,741 | 4,312 | 6,756 | 10,176 | 26,215 | 10,686 | 62,849 |
| PERCENTAGE DISTRIBUTION | | | | | | | | |
| 1919 | 2.8 | 5.4 | 8.9 | 11.2 | 14.7 | 38.7 | 18.3 | 100.0 |
| 1920 | 2.5 | 4.8 | 9.2 | 11.1 | 12.8 | 41.0 | 18.6 | 100.0 |
| 1921 | 3.4 | 4.4 | 6.5 | 9.0 | 15.6 | 43.5 | 17.6 | 100.0 |
| 1922 | 3.6 | 5.3 | 6.8 | 10.3 | 15.8 | 40.3 | 17.9 | 100.0 |
| 1923 | 2.7 | 5.1 | 8.1 | 12.1 | 15.9 | 38.3 | 17.8 | 100.0 |
| 1924 | 3.1 | 5.3 | 7.5 | 12.2 | 14.2 | 39.7 | 18.0 | 100.0 |
| 1925 | 3.4 | 5.9 | 7.8 | 12.9 | 14.8 | 37.1 | 18.1 | 100.0 |
| 1926 | 3.2 | 6.0 | 8.0 | 13.5 | 14.2 | 37.0 | 18.1 | 100.0 |
| 1927 | 3.6 | 6.0 | 8.1 | 12.6 | 15.5 | 36.7 | 17.5 | 100.0 |
| 1928 | 3.8 | 5.8 | 8.1 | 12.7 | 15.3 | 36.3 | 18.0 | 100.0 |
| 1929 | 3.7 | 5.8 | 8.7 | 12.5 | 15.4 | 36.1 | 17.8 | 100.0 |
| 1930 | 4.3 | 5.4 | 8.0 | 10.9 | 15.0 | 38.5 | 17.9 | 100.0 |
| 1931 | 4.5 | 3.8 | 6.2 | 10.2 | 16.6 | 41.2 | 17.5 | 100.0 |
| 1932 | 4.3 | 2.4 | 4.6 | 8.3 | 17.3 | 46.7 | 16.4 | 100.0 |
| 1933 | 4.0 | 2.1 | 5.0 | 8.3 | 15.9 | 48.8 | 15.9 | 100.0 |
| 1934 | 5.0 | 2.4 | 6.3 | 8.9 | 15.5 | 45.3 | 16.6 | 100.0 |
| 1935 | 4.7 | 2.8 | 6.9 | 10.7 | 16.2 | 41.7 | 17.0 | 100.0 |

Source: Kuznets, Simon, *Commodity Flow and Capital Formation*, table VIII–2, for all items except services which are estimated by National Resources Committee and described above.

### 5. Estimates of National Wealth by Major Segments of the Economy, 1935

In chapters III and V several tables and charts are given which are based on estimates of national wealth for 1935.

In this section a brief description is given of the methods used, (1) in estimating total national wealth and the wealth attached to major segments of the economy, and (2) in estimating the value of buildings and equipment. For purposes of this report the national wealth is measured by the value of land, buildings, equipment, and inventories.

*It is to be emphasized that these estimates are extremely crude and should be used with utmost caution.* They do not represent an effort to make precise estimates, only efforts to give crude approximations, so as to be able to make a rough comparison between the relative magnitude of the wealth employed or controlled in different segments.

The estimate of total national wealth was derived by estimating the wealth of the major segments of the economy. A brief description of the methods used for estimating the wealth of each segment considered follows.

The estimate of wealth held by the Federal Government was derived by adding to the Federal gold holdings in 1935 the amount of Federal Government wealth, exclusive of gold, as estimated by the Federal Trade Commission for 1922, plus the expenditures for plant and equipment, repairs and alterations, lands and structures and parts as shown in the reports of the Bureau of the Budget for the years 1923 to 1935 and deducting depreciation on equipment and buildings, both for those in use in 1922 and those acquired in the subsequent years. A depreciation of 15 percent a year was assumed for equipment and a depreciation of 3 percent a year for buildings. Because of the complexity of Federal Government accounts, the figures for wealth other than gold can be only very approximate.

The wealth held by State and local governments, exclusive of educational facilities, was estimated by adding to the 1922 figures for State and local governments, as estimated by the Federal Trade Commission, the amount of net receipts from bond sales by State and local governments for each year as reported by the *State and Municipal Compendium*, plus Public Works Administration and Reconstruction Finance Corporation grants by the Federal Government to State and local governments from 1933 to 1935, and deducting an annual depreciation charge of 3 percent a year on the value of improvements and that portion of the wealth allocated to education. Improvements were assumed to bear the same ratio to land as shown in the estimates for 1922. The resulting estimate is very much less reliable than that for the Federal Government.

In the case of manufacturing, total wealth was estimated by adjusting the value of total fixed assets and inventories of corporate manufacturing concerns which is reported in the *Statistics of Income*, 1935, for noncorporate assets. This was accomplished by applying the ratio of corporate to total value added by manufacture, i. e., 92 percent, as computed from the *Census of Manufactures*, 1929.

The total wealth of wholesale and retail trade was estimated by adjusting the value of total fixed assets and inventories of wholesale and retail corporations as reported in *Statistics of Income*, 1935, for noncorporate assets, by applying the ratio of corporate net sales to total sales in wholesale and retail trade as shown by the *Census of Distribution*, 1929, or 63 percent.

To estimate the total wealth of mining, the total fixed assets and inventories of corporate mining enterprises as reported in *Statistics of Income*, 1935, was adjusted for noncorporate assets by applying the ratio of corporate value of product to the total value of product of mining concerns, i. e., 96 percent, as reported in the *Census of Mines and Quarries*, 1929, page 14.

The wealth of the construction industry was estimated by adjusting the value of total fixed assets and inventories of corporate construction concerns as reported in the *Statistics of Income*, 1395, for noncorporate assets, by applying the ratio of the value of work done by corporations to total contract construction work done or 60 percent, as reported in the *Census of Business, Construction Industry*, 1935, volume 3, page 34.

In the case of finance, the assets and inventories of corporate financial institutions were adjusted for noncorporate assets by applying the estimated ratio of business done by corporate financial institutions to total business done by financial institutions in 1935, or 84 percent. This ratio was estimated by the Bureau of Foreign and Domestic Commerce and appears in the published *Verbatim Record of the Proceedings of the Temporary National Economic Committee*, volume 1, No. 2, section 1, December 2, 1938, page 64.

The total wealth of the service group was estimated by adjusting the corporate value of total fixed assets and inventories of the service group as given in *Statistics of Income*, 1935, for noncorporate assets by applying the estimated ratio of business done by corporate service concerns to total business done, or 30 percent. This ratio was estimated by the Bureau of Foreign and Domestic Commerce and appears in the published *Verbatim Record of the Proceedings of the Temporary National Economic Committee*, op. cit., page 64. To this estimate was added the value of public educational facilities amounting to 6,737 millions of dollars. This figure was obtained from the Office of Education, Department of Interior.

The total wealth of the utilities segment was estimated as follows: It was assumed that all of the utilities groups, with the exception of the auto, bus, and truck transport group, are 100 percent corporate. The total fixed assets and inventories of the corporate utilities were obtained from the *Statistics of Income*, 1935, and amounted to 50.2 billion dollars. It was estimated that the wealth of the auto transport group, corporate and noncorporate, amounted in 1935 to about 2.3 billion dollars. This estimate of auto transport wealth was based on the reported investment in plant and equipment for the commercial motor bus industry as shown in the *Census of Business*, 1935, raised to include trucks on a basis of the ratio of the number of buses produced as published in the report of the Automobile Manufacturers Association, *Bus Transportation*, to total for-hire-trucks reported in the *Census of Business*. It was next assumed that 50 percent of the wealth of the auto transport group or approximately 1.2 billion dollars was noncorporate. Finally, the estimated noncorporate value of fixed assets and inventories of the auto transport group, i. e., 1.2 billion dollars was added to the corporate value of fixed assets and inventories of the utilities group given in the *Statistics of Income*, i. e., 50.2 billion dollars, which gives an estimated figure of 51.4 billion dollars for the total wealth of the utilities group.

TABLE VI.—*Estimate of value of residential buildings in the United States in 1935*

| | |
|---|---|
| Number of owned nonfarm homes, 1930 (thousands)[1] | 10,503 |
| Average value of owned homes, 1930[2] | $6,100 |
| Number of rented nonfarm homes, 1930[1] (thousands) | 12,352 |
| Average rental nonfarm homes, 1930[2] | $33.25 |
| Average value of rented homes, 1930[3] | $3,990 |
| Value of owned homes, 1930 (billions of dollars)[4] | 66 |
| Value of rented homes, 1930 (billions of dollars)[4] | 49 |
| Value of residential buildings, 1930 (billions of dollars) | 115 |
| Depreciation allowance from 1930 35 (billions of dollars)[5] | 14 |
| Depreciated value in 1935 expressed in 1930 dollars (billions) | 101 |
| Decline in value from 1930 to 1935 (billions of dollars)[6] | 20 |
| Value of residential buildings existing in 1930, expressed in 1935 dollars (billions) | 81 |
| Residential new construction since 1930 (billions of dollars)[7] | 3 |
| Value of residential buildings, 1935 (billions of dollars) | 84 |
| Estimated value of residential buildings (billions of dollars) | 70-90 |

[1] Bureau of the Census, Department of Commerce, as given in *Statistical Abstract of the United States*, 1937, p. 50.

[2] Computed by graphical method from distribution of nonfarm homes according to value or monthly rental as given in locus cited above.

[3] Assuming that value is 10 times rental.

[4] Number of owned or rented nonfarm homes times average value.

[5] Assuming that 60 percent of value of land and buildings is value of buildings and that the average depreciation in 1930 is 50 percent and that depreciation is at rate of 2 percent per annum of the original value.

[6] Computed on the assumption of a 20 percent decline in residential building costs from 1930 to 1935.

[7] Based on estimates given in *Construction Industry in the United States, 1915–37*, U. S. Department of Commerce, p. 12; represents cumulated value of such construction for the years 1931–35.

The figures for Agriculture were taken directly from the *Census of Agriculture, 1935*, and include value of land, buildings, equipment, and livestock.

The estimate for value of residential housing is very crude. It was derived essentially by multiplying the average value of owned and rented homes by the number of homes reported by the Bureau of Census for 1930, as indicated in table VI. Because the estimate amounts to such a large item and because it is so crude it is given below as a bracket.

The value of personal property in 1935 was estimated by summating the value in the hands of consumers of semidurable goods and consumer durable goods including passenger automobiles. These estimates were based on annual data on commodity flow as given by Simon Kuznets, *Commodity Flow and Capital Formation*. Table VII shows the procedure used in computing the estimates.

In table VIII there is presented the estimated total national wealth by segments. The estimates for the segments have been derived from the sources cited above. However, the estimates are crude approximations and should be considered as such. For instance, the combined Government and finance segments are estimated to amount to 65.5 billion dollars, but have a possible range of from 60 to 70 billion dollars. Similarly, the service segment, which is estimated to be 25 billion dollars, has a range of from 20 to 30 billion dollars due to the crudeness of the estimate caused by the lack of adequate data pertaining to corporate and noncorporate wealth. In the case of the construction segment the possible range is estimated to be from 1 to 3 billion dollars. Residential housing is estimated to range from 70 to 90 billion dollars. Thus, the total national wealth which is estimated to be 365 billion dollars has a possible range of from 345 to 387 billion dollars though the true figure is probably closer to the lower than the higher figure. On the whole the figures are probably overestimates because of the nature of the procedure used for adjusting corporate assets to account for the noncorporate assets; the adjustments were made by the use of ratios which are derived from the operating characteristics of the segment. It may be presumed that the ratios of noncorporate wealth to corporate wealth are lower than the ratios of the measures of certain operating characteristics which are used here in making these estimates. To refer to the total wealth of the country as 350 or 360 billion dollars would indicate the general magnitude of the national wealth.

TABLE VII.—*Method of estimating personal property in the United States, 1935*

[Millions of dollars]

| | 1926 | 1927 | 1928 | 1929 | 1930 | 1931 | 1932 | 1933 | 1934 | 1935 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| CONSUMERS' DURABLE GOODS | | | | | | | | | | | |
| 1. Consumers' durable goods, current prices [1] | 9,445 | 8,890 | 9,174 | 9,913 | 7,550 | 5,748 | 3,806 | 3,882 | 4,686 | 5,918 | |
| 2. Passenger automobiles, current prices [2] | 3,193 | 3,005 | 3,190 | 3,351 | 2,553 | 1,943 | 1,287 | 1,313 | 1,585 | 2,000 | |
| 3. Consumers' durable goods excluding automobiles [3] | 6,252 | 5,885 | 5,984 | 6,562 | 4,997 | 3,805 | 2,519 | 2,569 | 3,101 | 3,918 | |
| 4. Value in 1935 (current dollars) [4] | 625 | 1,177 | 1,795 | 2,625 | 2,498 | 2,283 | 1,763 | 2,055 | 2,791 | 3,918 | |
| 5. Price index (1935=100) [5] | 107.9 | 109.4 | 110.8 | 113.0 | 108.1 | 101.5 | 95.6 | 95.5 | 101.7 | 100.0 | |
| 6. Value in 1935 (1935 dollars) [6] | 579 | 1,076 | 1,620 | 2,323 | 2,311 | 2,249 | 1,844 | 2,152 | 2,743 | 3,918 | 20,815 |
| CONSUMERS' SEMIDURABLE GOODS | | | | | | | | | | | |
| 7. Total semidurable goods, current prices [7] | 7,563 | 7,654 | 7,638 | 7,721 | 6,269 | 5,084 | 3,651 | 3,929 | | | |
| 8. Dry goods and notions [7] | 979 | 964 | 923 | 945 | 682 | 542 | 386 | 489 | | | |
| 9. Consumers' semidurable goods, current prices [8] | 6,584 | 6,690 | 6,715 | 6,776 | 5,587 | 4,542 | 3,265 | 3,440 | | | |
| 10. Percent consumers' to total [9] | .870 | .874 | .879 | .877 | .891 | .893 | .894 | .875 | [10].875 | [10].875 | |
| 11. Sales of total semidurable goods, current prices [11] | 12,734 | 11,911 | 12,339 | 12,565 | 10,644 | 8,572 | 6,109 | 6,235 | [12]7,412 | [12]8,051 | |
| 12. Estmated sales of consumers' semidurable goods [13] | 11,079 | 10,410 | 10,846 | 11,020 | 9,484 | 7,655 | 5,461 | 5,456 | 6,486 | 7,045 | |
| 13. Value in 1935 (current dollars) [14] | | | | | | 766 | 1,638 | 2,728 | 4,540 | 7,045 | |
| 14 Price index (1935=100) [15] | | | | | | 106.0 | 87.3 | 91.8 | 101.9 | 100.0 | |
| 15. Value in 1935 (1935 dollars) [16] | | | | | | 723 | 1,876 | 2,972 | 4,455 | 7,045 | 17,071 |
| PASSENGER AUTOMOBILES | | | | | | | | | | | |
| 16 Passenger automobiles, current prices [17] | | | 3,190 | 3,351 | 2,553 | 1,943 | 1,287 | 1,313 | 1,585 | 2,000 | |
| 17 Value in 1935 (current dollars) [18] | | | 399 | 838 | 957 | 972 | 804 | 985 | 1,387 | 2,000 | |
| 18 Price index (1935=100) [19] | | | 105.2 | 109.2 | 102.3 | 97.3 | 97.0 | 94.8 | 101.6 | 100.0 | |
| 19 Value in 1935 (1935 dollars) [20] | | | 379 | 767 | 930 | 999 | 829 | 1,039 | 1,365 | 2,000 | 8,308 |
| 20. Total personal property | | | | | | | | | | | 46,194 |

[1] Simon Kuznets, *Commodity Flow and Capital Formation*, National Bureau of Economic Research, 1938, line 1a, p. 484.
[2] Represents total sales of passenger automobiles, auto parts and accessories, motorcycles, and bicycles, adjusted for inventory charges. Simon Kuznets, *loc. cit.*
[3] Line (1) minus line (2).
[4] Assuming a constant depreciation at the rate of 10 percent per annum
[5] Kuznets, *op. cit.*, line 1a, p. 484, divided by line 1a, p. 485; i. e., consumers' durable goods in current dollars divided by consumers' durable goods in 1929 dollars
[6] Line (4) divided by line (5).
[7] Kuznets, *op. cit.*, p. 146
[8] Line (7) minus line (8).
[9] Percent of line (9) to line (7).
[10] Assuming no change from 1933
[11] Kuznets, *op. cit.*, p. 478. Sales to ultimate consumers.
[12] Assuming inventory change of −100 million dollars per annum.
[13] Applying ratio (line 10) to line (11).
[14] Applying the cumulative survival rates: 30 percent of value remains after 1 year, 50, 70, 90, 100 percent remaining after the second, third, fourth, and fifth years, respectively.
[15] Kuznets, *op. cit.*, line I-1, p. 478, divided by line I-1, p. 479, i. e., consumers' semidurable goods in current dollars divided by consumers' semidurable goods in 1929 dollars.
[16] Line (13) divided by line (14).
[17] Same as line (2).
[18] Assuming a constant depreciation at the rate of 12.5 percent per annum.
[19] Bureau of Labor Statistics index of automobile prices.
[20] Line (17) divided by line (18).

TABLE VIII.—*Wealth by segments of the American economy, 1935*

[Figures in billions of dollars]

| | |
|---|---|
| Total National Wealth | 365 |
| Government and finance (excluding public education) [1] | 65 |
| Federal | 16 |
| Land, buildings, equipment, and inventories (including gold). | |
| State and Local: Land, buildings, and equipment, exclusive of public education | 33 |
| Banking and Finance: Inventories and capital assets | 16 |
| Utilities | 51 |
| Services to the consumer (including public education) | 27 |
| Agriculture | 39 |
| Land and buildings | 33 |
| Machinery | 2 |
| Livestock | 4 |
| Manufacturing: Inventories and fixed capital | 31 |
| Trade: Inventories and fixed capital | 13 |
| Mining: Inventories and fixed capital | 6 |
| Construction: Inventories and capital assets | 1 |
| Miscellaneous | * |
| Residential Housing | 84 |
| Personal Property | 46 |

* The miscellaneous segment is estimated to be less than one-half billion dollars and is therefore not included.

[1] The wealth of the finance segment was estimated to be about 16 billion dollars.

NOTE.—The wealth given above for service includes, in addition to value of property of public educational institutions, an estimated value of 8 billions of dollars of privately owned tax-exempt property such as churches, benevolent institutions, schools, libraries, and museums.

The data presented in chart I of chapter III are based on table VIII. In each segment inventories were deducted from the total. To estimate the value of buildings and equipment, it was also necessary to deduct estimates of land values. The division of values between land and other fixed assets was based on data in the Federal Trade Commission's report on *National Wealth and Income* for 1922, for all segments except agriculture, which was estimated on a basis of the ratio of land value to total land and buildings reported in the *Census of Agriculture, 1930*. Table IX gives the total value of plant and equipment for four major segments. In addition to the value of buildings and equipment for 1935, this table also gives the data from which table III of chapter III was derived. These data in table III were derived by dividing the total value of plant and equipment by the 1919–1933 average annual value of construction and equipment for each segment as estimated by Simon Kuznets of the National Bureau of Economic Research.

TABLE IX.—*Value of plant and equipment for specified segments, 1935*

[In billions of dollars]

| | Plant | | Equipment | | Total | |
|---|---|---|---|---|---|---|
| | 1935 value | 1919–1933 Average annual construction | 1935 value | 1919–1933 Average production | 1935 value | 1919–1933 Average construction and production |
| Residential housing | 50 | 2.541 | ..... | ..... | 50 | 2.541 |
| Industrial | [1] 105 | 2.419 | ..... | 3.533 | 105 | 5.952 |
| Agriculture | 9 | 0.115 | 6 | 0.792 | 15 | 1.207 |
| Government | [1] 19 | [1] 2.641 | ..... | ..... | 19 | 2.641 |
| Total | 184,073 | ..... | 6 | ..... | 190 | ..... |

[1] Includes value of equipment which could not be segregated.

Finally, table I of chapter V was derived by dividing the value of land, buildings, and equipment obtained for the specified segments, by the method indicated above, by the equivalent full-time number of workers shown for the corresponding segments in table II of the report, *Patterns of Resource Use*.

## 6. Total Production in the United States, 1863–1937

In chart I of chapter V data on total volume of production are shown for the years of the period 1863–1937. For the period 1920–1937 the national income produced was expressed in terms of 1935 dollars and was based on data obtained from the National Bureau of Economic Research and the Department of Commerce. This is

TABLE X.—*Total production in the United States, 1863–1937*

[Billions of 1935 dollars]

| Year | Total production | Trend of production [1] | Year | Total production | Trend of production [1] |
|---|---|---|---|---|---|
| 1863 | 3.5 | ..... | 1901 | 24.1 | 21.8 |
| 1864 | 3.9 | ..... | 1902 | 28.0 | 25.6 |
| 1865 | 4.6 | ..... | 1903 | 27.5 | 26.6 |
| 1866 | 5.5 | ..... | 1904 | 28.4 | 27.5 |
| 1867 | 5.9 | ..... | 1905 | 31.5 | 28.4 |
| 1868 | 6.2 | ..... | 1906 | 33.4 | 29.5 |
| 1869 | 6.7 | ..... | 1907 | 32.2 | 30.6 |
| 1870 | 7.0 | ..... | 1908 | 29.4 | 31.6 |
| 1871 | 6.8 | ..... | 1909 | 33.1 | 32.7 |
| 1872 | 7.9 | ..... | 1910 | 34.5 | 33.9 |
| 1873 | 7.9 | ..... | 1911 | 33.8 | 35.1 |
| 1874 | 7.6 | ..... | 1912 | 38.1 | 36.3 |
| 1875 | 8.5 | ..... | 1913 | 37.8 | 37.7 |
| 1876 | 8.5 | ..... | 1914 | 37.5 | 39.0 |
| 1877 | 9.4 | ..... | 1915 | 40.9 | 40.1 |
| 1878 | 10.0 | ..... | 1916 | 43.7 | 41.8 |
| 1879 | 10.7 | 11.5 | 1917 | 45.0 | 43.2 |
| 1880 | 12.2 | 11.9 | 1918 | 44.6 | 44.8 |
| 1881 | 11.1 | 12.3 | 1919 | 43.8 | 46.4 |
| 1882 | 13.1 | 12.8 | 1920 | 47.2 | 48.1 |
| 1883 | 13.3 | 13.2 | 1921 | 39.9 | 49.8 |
| 1884 | 13.9 | 13.7 | 1922 | 49.4 | 51.5 |
| 1885 | 13.7 | 14.2 | 1923 | 55.7 | 53.3 |
| 1886 | 14.5 | 14.7 | 1924 | 55.6 | 55.2 |
| 1887 | 14.7 | 15.2 | 1925 | 58.4 | 57.3 |
| 1888 | 15.9 | 15.7 | 1926 | 59.6 | 59.3 |
| 1889 | 17.1 | 16.3 | 1927 | 59.8 | 61.4 |
| 1890 | 16.7 | 16.9 | 1928 | 63.6 | 63.5 |
| 1891 | 19.5 | 17.5 | 1929 | 66.3 | 65.8 |
| 1892 | 18.3 | 18.1 | 1930 | 57.1 | ..... |
| 1893 | 17.3 | 18.7 | 1931 | 49.1 | ..... |
| 1894 | 17.0 | 19.4 | 1932 | 40.7 | ..... |
| 1895 | 20.2 | 20.1 | 1933 | 45.2 | ..... |
| 1896 | 20.0 | 20.8 | 1934 | 51.4 | ..... |
| 1897 | 21.4 | 21.5 | 1935 | 55.2 | ..... |
| 1898 | 23.2 | 22.3 | 1936 | 62.7 | ..... |
| 1899 | 23.7 | 23.1 | 1937 | 66.3 | ..... |
| 1900 | 23.9 | 23.9 | | | |

[1] Trend values calculated from the formula derived from the data for the years of the period 1879–1929:

$$\text{Total production} = 23.9\ (\text{Billions of 1935 dollars})\ (1.035)^{\text{year}-1900}.$$

Source: For the years 1920–1937 production is represented by national income produced given in section 2 of this appendix and expressed in 1935 dollars.

For the years 1863–1920 from Warren and Pearson, *Physical Volume of Production in the United States* (1932) and consists of the index of physical production spliced to the real income produced series by applying the ratio of the two in 1920.

the same series used in chart I of chapter I except that in that chart national income was expressed in 1929 dollars. For the period 1863–1920, the index of physical production as given by Warren and Pearson was adjusted to the real national income produced series using the ratio of the two indexes in 1920.

It is apparent from this long-time series on the volume of production that the annual rate of growth for the period 1863–1879 is greater than for the subsequent period (excluding the recent depression). The fitted trend for the years of the period 1879–1929, however, shows a fairly uniform annual rate of increase of approximately 3.5 percent. This trend line fits the data very well—the residual areas (bounded by the trend line and the straight lines connecting the actual values for successive years) being small and alternating above and below the trend line over relatively short periods. The trend values are calculated from the following equation obtained by the method of least squares applied to the linear logarithmic form and using the data for the years of the period 1879–1929:

$$\underset{\text{(Billion of 1935 dollars)}}{\text{Total production}} = 23.9\ (1.035)^{\text{year}-1900}.$$

Table X shows the actual data on physical production and the corresponding trend values.

### 7. Income Produced by Segments of the American Economy, 1935

Chart IV of chapter V is based on estimates of national income published by the Department of Commerce. The segments include the following industries:

*Government and finance.*—This segment includes Federal, State, and local governments, minus salaries of school teachers which are included under services to the consumer, and receipts of post office which are included under utilities; also included are banks, insurance companies, and real estate, minus brokerage and building and loan associations transferred to miscellaneous, and "net rentals received by individuals" transferred to services to consumers.

*Utilities.*—This segment includes the following industries which are defined in the publication of the Department of Commerce, *National Income, 1929–35*, namely, electric light and power, gas, transportation, communication and post office, which is excluded from government.

*Services to the consumer.*—This segment is defined as in the publication of the Department of Commerce, referred to above. To the income produced is added "net rentals received by individuals" and salaries of school teachers—the latter was subtracted from income produced by government.

*Agriculture.*—This segment is the same as that defined in the publication of the Department of Commerce, referred to above.

*Manufacturing.*—This segment is the same as the corresponding segment defined in the publication of the Department of Commerce, *National Income, 1929–35*. To the income produced by the segment was added the shipbuilding industry.

*Trade.*—Same as definition given in Department of Commerce publication.

*Minerals.*—This segment is the same as the definition of "Mining" given in the publication of the Department of Commerce.

*Miscellaneous.*—Same as the definition given in the Department of Commerce publication. To the income produced by this segment was added income produced by brokerage houses and building and loan associations.

*Construction.*—This segment is the same as the corresponding segment defined in the publication of the Department of Commerce, except for the shipbuilding industry which was transferred to the manufacturing segment.

### 8. The Distribution of the Food Dollar, 1935

The estimated distribution of the food dollar is a crude approximation of the shares going to retailers, wholesalers, transportation agencies, processors, and farmers. The estimates were derived in the following manner:

*Farmer's share.*—Cash income from farm marketing, not including cotton, was 5,638 million dollars in 1935. The value of exports of edible farm products was $56,572,000 in that year. This figure was reduced by 20 percent to allow for mark-up between farmer and exporter and the result subtracted from cash income, leaving a balance of 5,593 million dollars as the farmer's share of consumer food expenditures.

*Processors' share.*—The "value added by manufacture" for all food industries in 1935 was 2,789 million dollars. The total value of products of the food industries in 1935 was 9,510 million dollars. Exports of manufactured foods were valued at 150 million dollars or 1.8 percent of total value of manufactured foods. This ratio was applied to the value added to estimate that part represented by exports and the value added was reduced by this amount (50 million dollars) leaving a balance of 2,739 million dollars as the processors' share of food expenditures.

*Wholesalers' share.*—The expenses of all food wholesalers as reported in the *Census of Business, 1935*, were totaled. To this figure of 1,055 million dollars was added 177 million dollars representing profits of wholesalers. The Federal Trade Commission's report on *Retail Price Maintenance* shows profits of wholesale grocers to be 1.6 percent of net sales in 1926. This ratio was applied to the total sales of all food wholesalers as reported in the *Census of Business, 1935*, to obtain estimated profits of 177 million dollars.

*Retailer's share.*—The expenses of food stores, eating and drinking places, and beer and liquor stores were added. Expenses in connection with food sales of other stores were estimated by use of the commodity sales of retailers published for 1929. General stores with food, drug stores, and food and general merchandise stores showed sales of food in 1929. The ratios of these sales were applied to the sales of these stores in 1935. Expenses were obtained by applying the expense ratio of each of these kinds of stores to their estimated food sales. Total receipts of all hotels were broken into sales of meals and beverages and other receipts by use of the ratio of meals and beverages to total receipts of those hotels reporting the break-down. The expense ratio of eating and drinking places were used to derive expenses of hotels for meal and beverage sales. To the total estimated expenses of all these groups was added a profit of 5 percent on net sales of food and meals.

*Transportation.*—The Interstate Commerce Commission reported freight revenue on individual commodities transported by rail in 1936. Revenue on food products amounted to 646 million dollars in 1936. These products were divided into agricultural, animal, and manufactured products. Each of these groups was reduced by the ratio which was shown for the total of those groups in 1935 to the total in 1936 giving an estimated figure of 582 million dollars for freight revenue on food products in 1935. The Bureau of Agricultural Economics, Department of Agriculture, estimated that the truck revenues from food products approximated 25 percent of the rail revenue or 145 million dollars. Thus, transportation's share of food expenditures amounted to 728 million dollars in 1935.

*Summary.*—Total expenditures of food would approximate the amounts received by farmers, the expenses and profits of manufacturers, wholesalers, and retailers of food, and costs of transportation. The estimated total of 13,629 million dollars in 1935 is distributed as follows:

| | Millions | Percent |
|---|---|---|
| Farmers' share | 5,593 | 41.1 |
| Processors' share | 2,739 | 20.1 |
| Wholesalers' share | 1,232 | 9.0 |
| Retailers' share | 3,337 | 24.5 |
| Transportation | 728 | 5.3 |
| Total | 13,629 | 100.0 |

The total food expenditures estimated in the National Resources Committee report, *Consumer Expenditures in the United States*, amounted to 14,753 million dollars. Since this figure is based on a sample, which is weighted heavily with low-income families, an upward bias probably exists in food expenditures. On the other hand, sales of food by retailers, and sales of food products to consumers by manufacturers and wholesalers as shown by the *Distribution of Sales by Manufacturing Plants, 1935*, and the *Census of Business, 1935*, amounted to 12,968 million dollars. The figure used in the estimate of the distribution of the food dollar is between these two extremes.

### 9. Consumer Income and New Nonfarm Dwelling Units Built, 1920–36

Chart XIV of chapter V is based on the data given in table XI.

TABLE XI.—*Consumer income and new nonfarm dwelling units built, 1920-1936*

| Year | Consumer income (billions of 1936 dollars)[1] | New nonfarm dwelling units built (000's)[2] | Year | Consumer income (billions of 1936 dollars) | New nonfarm dwelling units built (000's) |
|---|---|---|---|---|---|
| 1920 | 47.0 | 247 | 1929 | 65.3 | 509 |
| 1921 | 42.3 | 449 | 1930 | 60.4 | 286 |
| 1922 | 48.8 | 716 | 1931 | 54.6 | 212 |
| 1923 | 54.8 | 871 | 1932 | 40.7 | 71 |
| 1924 | 55.4 | 893 | 1933 | 48.2 | 54 |
| 1925 | 57.0 | 937 | 1934 | 54.0 | 55 |
| 1926 | 58.3 | 849 | 1935 | 56.9 | 114 |
| 1927 | 58.9 | 810 | 1936 | 63.9 | 282 |
| 1928 | 62.2 | 753 | | | |

[1] Consumer income based on the National Bureau of Economic Research data on income paid out to individuals for the years 1920–28 and on the Department of Commerce data on national income paid out, plus noncorporate business savings for the years 1929–36; the value series was deflated by the cost of living index of the Bureau of Labor Statistics.

[2] New nonfarm dwellings, National Bureau of Economic Research, *Bulletin No. 65*, September 1937, by David L. Wickens and Ray Foster.

### 10. Unit Labor Requirement in Agriculture, 1920–36

In chapter V, chart XVI, the unit labor requirements are shown for various specified industries. In all cases except agriculture the source of the data is *Technological Trends and National Policy*, National Resources Committee, June 1937, table 8, page 77. For agriculture table XII shows the data used.

TABLE XII.—*Index of unit labor requirement in agriculture, 1920–36*

| Year | Unit labor requirement[1] (1920=100) | Year | Unit labor requirement[1] (1920=100) |
|---|---|---|---|
| 1920 | 100 | 1929 | 91 |
| 1921 | 117 | 1930 | 96 |
| 1922 | 109 | 1931 | 87 |
| 1923 | 106 | 1932 | 92 |
| 1924 | 103 | 1933 | 97 |
| 1925 | 98 | 1934 | 114 |
| 1926 | 95 | 1935 | 99 |
| 1927 | 98 | 1936 | 104 |
| 1928 | 93 | | |

[1] Obtained by dividing indexes of total agricultural employment by agricultural production. The indexes of employment are given in the report of the Works Progress Administration, National Research Project, *Trends in Employment in Agriculture, 1909–1936*. Indexes of production were obtained from *Trends in Size and Production of the Aggregate Farm Enterprise*, Works Progress Administration National Research Project, Report No. S.

### 11. National Income Paid Out, 1919–37

Charts I, II, III, and IV, presented in chapter VI, are based on data supplied by the National Income

Section of the Bureau of Foreign and Domestic Commerce, Department of Commerce, and the National Bureau of Economic Research. The data on which charts I, III, and IV are based are presented in table XIII. The classification of industrial segments used in chart II is according to the definitions given in the National Resources Committee report, *Patterns of Resource Use*. The basic data, however, were compiled and published by the Department of Commerce in *National Income, 1929–35*. Since the classifications given in the publication of the Department of Commerce differ from those given in the *Patterns of Resource Use*, certain adjustments were made. These adjustments were limited by the break-downs of the basic data and not all of the adjustments performed on the material on income produced could be made to these data. The data in chart II of chapter VI are, therefore, not quite comparable with those in chart IV of chapter V.

In order to make the classifications comparable to those in the chart on income produced, the following changes are indicated by the segment definitions: Post office and public education should be removed from the Government segment and added to the totals for railroads and utilities, and services to the consumer, respectively. Brokerage houses, building and loan companies, and realty companies should be subtracted from finance and added to miscellaneous and services to the consumer, respectively. Shipbuilding should be shifted from construction to manufacturing. These changes in classification were made, with the following exceptions. The detailed break-down, by industrial group, for dividends, interest, rent, royalties, was not available. Therefore, this type of income paid out was not quite accurately distributed. Post office and public education could not be separated from the rest of the Government segment and added to utilities and services to the consumer, respectively. Rent and interest on bonds for these items are probably large; hence this type of income paid out by the Government segment is overstated and utilities and services to the consumer understated. Similarly, shipbuilding could not be separated from construction and added to manufacturing, and brokerage could not be shifted from finance to miscellaneous.

The other two types of income paid out, i. e., to employees and entrepreneurs, are comparable to the totals for income produced. More detailed break-downs were available than in the case of dividends and interest, and the corresponding changes in classification were made. A small subclassification under finance, realty companies, was not separable from finance for any type of income paid out, but the resulting error is probably insignificant.

As in the case of income produced all net rents and royalties were put into services to the consumer. Social security contributions by employees were included in miscellaneous salaries and wages. Work relief was included in salaries and wages paid by government.

## 12. Derivation of Indexes of Consumer Expenditures and Consumer Income, 1929–1938

In chapter VI a chart is presented on which appears an index of consumer expenditures and an index of consumer income for the years of the period 1929 to 1937. The index of consumer income was derived from data published by the Department of Commerce and consists of income paid out, plus noncorporate business savings. The index of consumer expenditures, on the other hand, was derived from data obtained from numerous sources. Unfortunately, the data from which an index of consumer expenditures could be derived are

TABLE XIII.—*Amount and proportion of national income paid out, 1919–1937* [1]

[In millions of dollars]

| Year | Wages and salaries [2] | Entrepreneurial withdrawals [3] | Dividends | Interest | Rents, royalties and balance of international payments | Grand Total |
|---|---|---|---|---|---|---|
| 1919 | 36,145 | 11,958 | 2,895 | 2,925 | 2,455 | 56,378 |
| 1920 | 42,667 | 13,838 | 3,215 | 3,279 | 2,767 | 65,766 |
| 1921 | 34,423 | 10,268 | 2,932 | 3,410 | 2,246 | 53,279 |
| 1922 | 36,659 | 10,224 | 3,006 | 3,535 | 3,497 | 56,921 |
| 1923 | 42,255 | 11,165 | 3,823 | 3,772 | 3,651 | 64,666 |
| 1924 | 42,494 | 11,356 | 3,762 | 3,997 | 3,917 | 65,526 |
| 1925 | 44,494 | 11,648 | 4,362 | 4,249 | 3,920 | 68,672 |
| 1926 | 46,985 | 11,804 | 4,736 | 4,410 | 3,655 | 71,590 |
| 1927 | 47,204 | 11,781 | 5,036 | 4,678 | 3,471 | 72,170 |
| 1928 | 48,717 | 11,940 | 5,362 | 4,976 | 3,591 | 74,586 |
| 1929 | 51,509 | 12,296 | 5,978 | 5,202 | 3,569 | 78,554 |
| 1930 | 47,551 | 11,581 | 5,801 | 5,393 | 2,965 | 73,291 |
| 1931 | 40,188 | 9,848 | 4,335 | 5,295 | 2,366 | 62,032 |
| 1932 | 31,563 | 6,887 | 2,745 | 5,079 | 1,811 | 49,025 |
| 1933 | 29,596 | 7,214 | 2,209 | 4,710 | 1,587 | 45,316 |
| 1934 | 34,051 | 8,021 | 2,793 | 4,862 | 1,783 | 51,510 |
| 1935 | 36,679 | 8,729 | 3,038 | 4,725 | 1,966 | 55,137 |
| 1936 | 41,906 | 9,565 | 4,284 | 4,652 | 2,179 | 62,586 |
| 1937 | 46,728 | 10,441 | 5,010 | 4,656 | 2,496 | 69,331 |
| PERCENTAGE DISTRIBUTION | | | | | | |
| 1919 | 64.1 | 21.2 | 5.1 | 5.2 | 4.4 | 100.0 |
| 1920 | 65.0 | 21.0 | 4.9 | 5.0 | 4.1 | 100.0 |
| 1921 | 64.6 | 19.3 | 5.5 | 6.4 | 4.2 | 100.0 |
| 1922 | 64.4 | 18.0 | 5.3 | 6.2 | 6.1 | 100.0 |
| 1923 | 65.4 | 17.3 | 5.9 | 5.8 | 5.6 | 100.0 |
| 1924 | 64.9 | 17.3 | 5.7 | 6.1 | 6.0 | 100.0 |
| 1925 | 64.7 | 17.0 | 6.4 | 6.2 | 5.7 | 100.0 |
| 1926 | 65.6 | 16.5 | 6.6 | 6.2 | 5.1 | 100.0 |
| 1927 | 65.4 | 16.3 | 7.0 | 6.5 | 4.8 | 100.0 |
| 1928 | 65.3 | 16.0 | 7.2 | 6.7 | 4.8 | 100.0 |
| 1929 | 65.6 | 15.7 | 7.6 | 6.6 | 4.5 | 100.0 |
| 1930 | 64.9 | 15.8 | 7.9 | 7.4 | 4.0 | 100.0 |
| 1931 | 64.8 | 15.9 | 7.0 | 8.5 | 3.8 | 100.0 |
| 1932 | 64.4 | 16.1 | 5.6 | 10.2 | 3.7 | 100.0 |
| 1933 | 65.3 | 15.9 | 4.9 | 10.4 | 3.5 | 100.0 |
| 1934 | 66.1 | 15.6 | 5.4 | 9.4 | 3.5 | 100.0 |
| 1935 | 66.5 | 15.8 | 5.5 | 8.6 | 3.6 | 100.0 |
| 1936 | 67.0 | 15.3 | 6.8 | 7.4 | 3.5 | 100.0 |
| 1937 | 67.4 | 15.1 | 7.2 | 6.7 | 3.6 | 100.0 |

[1] Source: 1919–28, National Bureau of Economic Research; 1929–37, Department of Commerce, Bureau of Foreign and Domestic Commerce. National Bureau figures spliced onto Commerce figures upon basis of 1929 ratio.

[2] Includes work relief wages, employers' contribution to social security, and other labor income.

[3] National Bureau estimates adjusted to segregate entrepreneurial withdrawal from salaries and wages in service and miscellaneous industries on basis of average ratio of those items to total income, 1930–35 in Commerce estimates.

far from complete and certain glaring omissions necessarily result. However, with the available data it has been possible to construct an index representing roughly the volume of consumer expenditures. The purpose of this section is to discuss briefly the series composing the final index, the sources from which they were obtained, and the manner in which they were combined.

All of the series which were used represent direct purchases of goods or services by consumers.

There are 13 general series incorporated in the final index; these cover the following items: (1) chain-grocery sales, (2) department-store sales, (3) rural general-store sales, (4) variety-store sales, (5) automobile sales, (6) restaurant sales, (7) gasoline sales, (8) natural and manufactured gas sales, (9) electric light and power revenues, (10) telephone revenues, (11) transit fares, (12) railroad passenger revenues, and (13) hotel receipts (excluding meals).

The index of chain-store sales was computed by the Department of Commerce from sample data supplied by chain grocery stores whose sales amounted to about 75 percent of the total grocery chain-store business. The index of department-store sales was computed by the Board of Governors of the Federal Reserve System from reports received from a large number of department stores located in various parts of the country. The index of rural retail sales was derived from the mail-order sales of three large mail-order houses and the store sales of a general merchandise chain whose business is predominantly rural. The index of variety-store sales was computed by the Department of Commerce from reports of seven chains covering identical stores doing more than 75 percent of the total business of chain units in this field. The index of automobile sales was based on the index of new passenger-car sales computed by the Department of Commerce; this was modified by data on financing of new and used cars in order to estimate total sales of all automobiles. The index of restaurant sales is a composite index based upon two separate indexes representing the sales of chain restaurants and hotel restaurants. Chain restaurant sales are represented by the combined sales of restaurants operated by the Childs Company, J. R. Thompson Company, and the Waldorf System, Inc.; while the index of hotel restaurant sales was based on data compiled by Horwath and Horwath from reports of a large number of hotels, transient and residential, throughout the country. The index of gasoline sales was specifically computed from data compiled by the American Petroleum Institute representing the quantity of gasoline sold or offered for sale as reported by wholesalers and dealers under provisions of the gasoline tax or inspection laws.

The index of sales of natural and manufactured gas was based on data compiled by the American Gas Association. The index of electric power and light revenues was based on data compiled by the Edison Electric Institute, from reports representing over 90 percent of the industry. The index of telephone revenues was based upon data compiled by the Interstate Commerce Commission through 1933, and thereafter by the Federal Communications Commission. The index of transit fares was based upon data compiled by the American Transit Association after 1932, prior to that date by the American Electric Railway Association. The index of railroad passenger revenues was based on data compiled by the Interstate Commerce Commission from reports of all class I railroads exclusive of switching and terminal companies. The index of hotel receipts was based upon data compiled by Horwath and Horwath from reports of a large number of hotels located throughout the country.

The various indexes listed above were combined into a single index representative of consumer expenditures. This was accomplished by using a system of weights based on the proportion of sales of each series to total sales as indicated by Census Bureau data for 1929.

Table XIV gives the index of consumer income and of consumer expenditures for the years of the period 1929–38. The table also gives the estimated value of consumer expenditures for each year of the same period. These values were employed in table VI of chapter VI and chart XII of chapter VI.

TABLE XIV.—*Consumer income and expenditures, 1929–38*

| Year | Consumer income [1] (1929=100) | Consumer expenditures | |
|---|---|---|---|
| | | Index [2] (1929=100) | Value [3] (millions of dollars) |
| 1929 | 100.0 | 100.0 | 62,300 |
| 1930 | 90.7 | 90.8 | 56,568 |
| 1931 | 74.9 | 80.0 | 49,840 |
| 1932 | 57.9 | 65.5 | 40,806 |
| 1933 | 56.2 | 62.9 | 39,187 |
| 1934 | 65.3 | 69.7 | 43,423 |
| 1935 | 70.5 | 76.7 | 47,781 |
| 1936 | 80.6 | 85.0 | 52,955 |
| 1937 | 88.3 | 89.9 | 56,008 |
| 1938 [4] | 80.7 | 82.5 | 51,398 |

[1] Based on national income paid out plus noncorporate business savings estimated by the Department of Commerce.
[2] Obtained as described in the text above.
[3] Obtained by applying the index of consumer expenditures to the value of consumer expenditures for 1935–36 of $50,214,000 as given in the report of the National Resources Committee, *Consumer Expenditures in the United States*. The index of consumer expenditures for the year July 1935 to June 1936 is 80.6 (1929=100), obtained from monthly indexes derived by the method described above.
[4] Partly estimated.

## 13. Major Money Flows in the American Economy, 1929

Wassily W. Leontief prepared a table which shows the flow of goods from each major segment of the economy to other major segments in terms of money values appropriately representing such flows for 1929. A description of the terms used and of the procedure employed

in the preparation of the table is given in appendix 17. In this section a brief discussion is given of the modifications made in summarizing Leontief's table so as to cover much broader segments of the economy. The resulting summary is shown in table II and chart VI of chapter VI.

Each entry in table II of chapter VI has been obtained from table I of appendix 17 by summating the approximate items included within the respective segment associated with the entry. However, a few additional modifications were made which consisted in adding three new segments not appearing in Leontief's table.

The three additional segments are Government, financial enterprises, and trading enterprises. For Government and finance only one entry has been made, i. e., income received by consumers. This is income paid out estimated by the National Income Section, U. S. Department of Commerce.

The introduction of trading enterprises as an additional segment affects some of the entries in the segment for consumer expenditures. (Leontief's "consumption" item.) The following list gives a description of the entries related to trading enterprises:

(1) Money received by agricultural enterprises from consumption, as shown by Leontief, was allocated between sales to trading enterprises and direct sales to consumers on the assumption that 10 percent of farm sales were direct sales to consumers. (See Simon Kuznets, *Capital Formation and Commodity Flow*, p. 172.)

(2) It is assumed that all sales of mining enterprises went directly to trade and Leontief's figure on money received by mining enterprises from consumption was transferred to trade.

(3) The amount received by manufacturing enterprises direct from consumers was obtained by applying the ratio of sales by manufactures direct to ultimate consumers to the total cost of finished commodities to ultimate consumers (see Kuznets, loc. cit., p. 206) to the total summated items representing money received by manufacturing from consumption as obtained from Leontief's table. This figure subtracted from Leontief's total resulted in the amount received by manufacturing enterprises from trading enterprises.

(4) The amount received by trading enterprises from trading enterprises consists of sales by wholesalers to retailers of total finished commodities less sales of producers' durable commodities as given in Kuznets (loc. cit., p. 197).

(5) The amount received by trading enterprises from exports was derived from value of total finished commodities exported by wholesalers less exports by wholesalers of producers' durable commodities. (See Kuznets, loc. cit., p. 197).

(6) The amount received by trading enterprises from consumer expenditures consists of total cost of finished commodities to ultimate consumers less cost to ultimate consumers of producers' durable goods as given in Kuznets (loc. cit., p. 205); from this figure were deducted the amounts received by agricultural and manufacturing enterprises from consumer expenditures—see (1) and (3) above.

(7) Leontief's item "amount paid for imports for consumption" was assumed to go through trading enterprises and was allocated to this segment.

(8) The income received by consumers from trading enterprises consists of income paid out plus noncorporate business savings of trading enterprises estimated by the National Income Section, U. S. Department of Commerce.

The items in the column, "money payments not allocated," and the row, "money receipts not allocated," were derived by deducting from the gross total the sum of all the other items appearing in the respective column or row (excluding the item "net total").

## 14. The Supply of Money of the United States, 1921–1937

Chart VII of chapter VI is based on data furnished by the Division of Research and Statistics of the Board of Governors of the Federal Reserve System. Table XV gives the data on which the chart is based.

TABLE XV.—*The money supply of the United States,*[1] *1921–37*

[Amounts in millions of dollars]

| June 30 | Adjusted demand deposits in all banks | Money in circulation | Total money | June 30 | Adjusted demand deposits in all banks | Money in circulation | Total money |
|---|---|---|---|---|---|---|---|
| 1921 | 17,660 | 3,698 | 21,358 | 1930 | 22,729 | 3,381 | 26,110 |
| 1922 | 18,464 | 3,362 | 21,826 | 1931 | 20,946 | 3,670 | 24,616 |
| 1923 | 19,617 | 3,759 | 23,376 | 1932 | 16,275 | 4,634 | 20,909 |
| 1924 | 20,325 | 3,662 | 23,987 | 1933 | 15,501 | 4,784 | 20,285 |
| 1925 | 21,920 | 3,590 | 25,510 | 1934 | 18,603 | 4,684 | 23,287 |
| 1926 | 22,428 | 3,623 | 26,051 | 1935 | 21,754 | 4,783 | 26,537 |
| 1927 | 23,101 | 3,579 | 26,680 | 1936 | 26,220 | 5,222 | 31,442 |
| 1928 | 23,256 | 3,643 | 26,899 | 1937 | 26,794 | 5,509 | 32,303 |
| 1929 | 23,482 | 3,660 | 27,142 | | | | |

[1] Data furnished by the Division of Research and Statistics of the Board of Governors of the Federal Reserve System.

## 15. Demand Deposits of Single Individuals and Families With Incomes Under $5,000, December 31, 1935

On page 88 of chapter VI, an estimate is given representing the proportion of total demand deposits held by consumers with incomes under $5,000. This estimate was derived by making use of two sources, namely, an article by Lauchlin Currie entitled "The Economic Distribution of Demand Deposits," *Journal of American Statistical Association*, June 1938, and a report of the National Resources Committee published in August of 1938 entitled *Consumer Incomes in the United States.*

The procedure used is briefly this: to estimate the total consumer deposits of less than $100,000 and correct this figure for total consumer deposits of between $5,000 and $100,000. The latter totals were estimated on the assumption that these consumers included only those with incomes between $5,000 and $100,000 and that their proportion of total consumer deposits was the same as their proportion of total consumer income. The result is necessarily rough since it depends on how closely the assumption fits the actual condition.

Table XVI gives the steps used in making the estimates.

TABLE XVI. *Demand deposits held by consumers (as of December 31, 1935)*

[Figures in millions of dollars]

| | | |
|---|---|---|
| A. Consumers' and unclassified deposits [1] | 5,130 | |
| B. Individual accounts over $100,000 [1] | 430 | |
| C. Accounts not held by consumers [2] | 1,049 | |
| D. Total consumer deposits of less than $100,000 A−B−C | 3,651 | |
| Aggregate income of consumers with incomes of less than $100,000, 1935–1936 [3] | | 58,163 |
| Aggregate income of consumers with incomes of between $5,000 and $100,000, 1935–36 [3] | | 10,563 |
| E. Percent | | 18.16 |
| F. Estimated accounts of consumers with incomes between $5,000 and $100,000 D÷E | 663 | |
| G. Estimated deposits of consumers having incomes of less than $5,000 D−F | 2,988 | |
| H. Percent of total deposits held by consumers with incomes of less than $5,000 [4] | 13.7 | |

[1] See ch. VI, table III; for individual accounts over $100,000, see Lauchlin Currie, loc. cit., p. 321.

[2] See ibid., p. 320.

[3] *Consumer Incomes in the United States*, National Resources Committee, p. 6.

[4] Percent of item G to total deposits 21,800 million dollars. (See table III, ch. VI.)

## 16. Corporate Funds Derived from Operations and Available for Capital Formation, 1926–35

The data on which chart IX of chapter VI is based are shown in table XVII.

TABLE XVII.—*Corporate funds derived from operations and available for capital formation, 1926–1935*

[Billions of dollars]

| Year | Depreciation and depletion [1] all corporations | Corporate savings [2] | Funds available for capital formation [3] |
|---|---|---|---|
| 1926 | 3.8 | 1.2 | 5.0 |
| 1927 | 3.8 | .3 | 4.1 |
| 1928 | 4.1 | 1.4 | 5.5 |
| 1929 | 4.4 | 1.4 | 5.8 |
| 1930 | 4.4 | −3.9 | .5 |
| 1931 | 4.3 | −5.9 | −1.6 |
| 1932 | 3.9 | −6.4 | −2.5 |
| 1933 | 3.7 | −2.8 | .9 |
| 1934 | 3.7 | −2.1 | 1.6 |
| 1935 | 3.7 | −1.2 | 2.5 |

[1] *Statistics of Income*, Bureau of Internal Revenue, for respective years.

[2] 1926–28 based on National Bureau of Economic Research, national income produced less income payments to individuals (including noncorporate business savings); 1929–35, Department of Commerce estimates of national income produced less income paid out, less noncorporate business savings.

[3] Depreciation and depletion plus corporate savings.

## 17. New Capital Issues, 1919–37

The data upon which chart X of chapter VI is based are presented in table XVIII. These data which represent the amount of money expended by governments and corporations for new capital issues in the United States for the years of the period 1919 to 1937, were compiled by the *Commercial and Financial Chronicle* and reported in the *Survey of Current Business*. An important fact that should be noted in connection with the data is that the amount expended for new real investment, i. e., "chiefly additions to fixed plant and equipment and all types of inventories" is considerably less than the amount reported by the Chronicle for new capital issues. Included within the Chronicle's classification of new capital issues are issues which involve transactions of a purely financial character. Thus it has been estimated by George A. Eddy [5] that real investment issues amounted in 1929 to approximately one-fourth of the total new capital issues as reported by the *Commercial and Financial Chronicle*.

TABLE XVIII. *New capital issues, 1919–37* [1]

[Millions of dollars]

| Year | Total corporate new capital issues, excluding investment trusts, holding companies, etc. | Total governmental new capital issues, including Federal, State, and municipal issues | Total corporate and governmental new capital issues |
|---|---|---|---|
| 1919 | 2,303 | 988 | 3,291 |
| 1920 | 2,710 | 672 | 3,382 |
| 1921 | 1,823 | 1,321 | 3,144 |
| 1922 | 2,336 | 1,421 | 3,757 |
| 1923 | 2,702 | 1,380 | 4,082 |
| 1924 | 3,322 | 1,559 | 4,881 |
| 1925 | 4,086 | 1,521 | 5,607 |
| 1926 | 4,286 | 1,435 | 5,721 |
| 1927 | 5,216 | 1,562 | 6,778 |
| 1928 | 5,293 | 1,443 | 6,736 |
| 1929 | 6,117 | 1,418 | 7,535 |
| 1930 | 4,711 | 1,521 | 6,232 |
| 1931 | 1,759 | 1,310 | 3,069 |
| 1932 | 324 | 839 | 1,163 |
| 1933 | 159 | 547 | 706 |
| 1934 | 159 | 1,208 | 1,367 |
| 1935 | 402 | 1,005 | 1,407 |
| 1936 | 1,202 | 757 | 1,959 |
| 1937 | 1,194 | 884 | 2,078 |

[1] These figures exclude issues which specifically indicate that they are for refunding purposes and those issued by companies that can clearly be designated investment trusts, trading and holding companies. In spite of the exclusion of such issues, a large part of the funds appear to have been used for the retirement of outstanding issues, purchase of securities, the purchase of property, and the addition to money balances; only a part was used to finance capital formation. The data are shown here only to emphasize the wide swings in funds derived from new security issues.

Source: Based on data compiled by the *Commercial and Financial Chronicle* as reported in the *Survey of Current Business*, February 1938, pp. 11–20, and May 1938, pp. 17–20.

## 18. Distribution of Economic Units and Number of Persons Employed in the American Economy, 1937

Data on the number of economic units and the corresponding employment from which it would be pos-

[5] George A. Eddy, "Security Issues and Real Investment in 1929," *The Review of Economic Statistics*, May 1938, pp. 79–91.

sible to distribute the economic units and employment by the number employed are quite incomplete and unsatisfactory. The data collected by the Social Security Board for industry and the Interstate Commerce Commission for railways are reasonably accurate and complete. In the case of agriculture the data are less satisfactory, while for the remaining segments, particularly the services, the available data are very sketchy.

The Social Security Board compiles data for many industries under the old-age insurance program on employer returns and employee wage items, which it has grouped in a frequency distribution according to the number of wage items per employer return.[6] The returns covering the period July to December 1937 were used here in making estimates. However, there is a considerable amount of duplication in the employee wage items since over the 6 months' period the same individual may be reported by more than one employer. Some employees who are ordinarily attached to industries other than those reporting to the Social Security Board may also appear in the returns. Finally, some who would ordinarily be considered as unemployed might also appear. Thus, the Social Security Board estimates that there were about 32.5 million different wage earners represented during the latter half of 1937 by the 37.1 million wage items reported by the 1.7 million employer returns to the board. This latter figure overstates the actual number of economic units as the term is defined in chapter VII. This is due to the fact that all corporate subsidiaries make separate employer returns. For example, General Motors Corporation was represented by 54 or more employer returns. This has the effect of understating both the number of economic units and employees in the 10,000 and over class, appearing in table 1 of chapter VII, while overstating both in the classes under 10,000; the net effect being an overstatement of employer units.

The number of wage items reported to the Social Security Board was adjusted in each class, shown in table I of chapter VII, to approximate the actual number employed. This was done in each class by applying the proportion of the total number employed as estimated by the Social Security Board to the corresponding number of wage items, i. e., 87.6 percent. There was no basis for making a corresponding adjustment in the number of employer returns and so in the 10,000 and over class the number of employer returns is probably slightly larger than it would be if the distribution were based on the actual employment.

The data covering railroads, published by the Interstate Commerce Commission,[7] are perhaps the most satisfactory of any for the purposes at hand. The Commission reported, for the calendar year 1936, the average number of employees for each class I steam railway company, from which a frequency distribution of employees and employer companies according to the number of employees per company was derived. Although 1936 data were used, as the 1937 report was not yet published, the difference in the total number of employees and companies for the 2 years is relatively insignificant.

The distribution of agricultural employment and number of farms is based on a frequency distribution of hired labor according to the number per farm,[8] since no data are available relating to the combination of family and hired labor. This has necessitated making certain assumptions in order to approximate a distribution for total engaged. It has been assumed that farms employing four hired laborers or less would not individually aggregate more than five laborers—family and hired. This assumption is not unreasonable as the average number of family workers per farm reporting hired workers is 1.3. The use of this assumption resulted in approximately 6.8 million farms, engaging 11.9 million persons, falling in the 1 to 5 persons employed class, and about 41,300 farms, engaging about 356,000 persons, which were involved in the gainful activity of over 5 persons per farm. There are other limitations to these data, however, that necessitate their being used with the greatest caution. For instance, the census reports family and hired workers as of the first week in January 1935, only. Obviously, this can be only a crude approximation of the average number employed during 1937.

The total number of employees in the Federal Government during 1937 was estimated by the Department of Commerce to have been about 1.2 million. This number was allocated to the class, 10,000 and over, as the Federal Government is counted as one economic unit.

The total number of State employees during 1937 was estimated by the Department of Commerce to have been about 367,000. In addition, there were about 59,000 employees engaged in public education. The 426,000 engaged in State employment and the 48 States were apportioned in a frequency distribution by means of a sample of 28 States obtained from the Department of Commerce.

The total number of county employees during 1937 was estimated by the Department of Commerce to have been about 805,000, of which 506,000 were engaged in public education. The 805,000 employees and the 3,071 counties were apportioned in a frequency distribution on the basis of a sample of 280 counties collected by the Department of Commerce.

[6] John J. Corson, *Wages and Employment Under the Old-Age Insurance Program*, Social Security Board, October 1938, table 2.

[7] Interstate Commerce Commission, *Statistics of Railways in the United States, 1936*.

[8] *U. S. Census of Agriculture, 1935*, vol. III, p. 164.

The total number of municipal and rural incorporated places in 1930 amounted to 16,598 according to the *U. S. Census of Population, 1930*, volume I, page 14. These incorporated places employed a total of about 1,332,000 employees, of which about 635,000 were engaged in public education. In order to estimate a frequency distribution of employees and incorporated places, the *Census of Population* was used as a basis. In volume I, page 14, of the *1930 Census of Population* there appears a table of the population of the United States in groups of cities classified according to size. Using the Department of Commerce's sample of municipal places and the data from the Census of Population as a basis, it was estimated that 13 cities of 500,000 population or over in 1930, employed over 10,000 city employees in 1937; likewise that the 80 cities of from 100,000 to 500,000 population employed between 1,000 and 9,999 persons; that the 283 cities of from 25,000 to 100,000 population employed between 300 and 999 persons; and that the remaining some odd 16,220 places of under 25,000 population employed between 6 and 299 persons. The reason for not using solely the sample compiled by the Department of Commerce is because of its practically complete coverage of larger cities which would have caused, if it had been used, too large a proportion of the employees and incorporated places being placed in the class of 10,000 and over.

The data on private education concerning the number of economic units, or in this case schools, are somewhat unsatisfactory. The best estimate available for the number of private schools covers the year 1933–34 in which there were about 17,801.[9] The total employment in private schools during 1937 was estimated by the Department of Commerce to have been about 216,000. It was assumed arbitrarily that all the school units employed between 6 and 299 persons or an average of about 12 per unit.

The data on services are most incomplete of all, there being none on the number of economic units. The Department of Commerce estimated that there were about 3,193,000 professional and domestic service employees in 1937. It was assumed that most of these employees worked in small units which did not employ more than 5 persons per unit. A reasonable guess as to the number of such units would appear to be between 1,500,000 and 2,000,000, which was the range used in the summary table appearing in table I of chapter VII.

### 19. Employment in Governmental Units, 1935

The employment shown for 20 governmental units in table II of chapter VII have been derived from the following sources:

Employment for Federal Government and the United States Post Office represent equivalent full-time employment as estimated by the National Income Section of the Department of Commerce. The employment for State and municipal governments are also on an equivalent full-time basis. In each case the basic data were obtained from the unpublished material of the National Income Section of the Department of Commerce. These data were then adjusted to include public education by the addition of the respective employment in public education, estimated by the United States Office of Education (*Statistics of City School Systems, 1935–36*, page 28; *Statistics of State School Systems, 1935–36*, page 73; the data which were not available in these publications were obtained from the work sheets in the Office of Education).

### 20. Prices in Commodity, Labor, and Security Markets, 1913–1937

Table XIX gives the data and the sources for the material presented in charts I and II of chapter VIII.

TABLE XIX. *Prices in commodity, labor and securities markets, 1913–37*

[1926–29=100]

| Year | Wholesale prices [1] | Composite index of wages [2] | Index of security prices [3] | Cost of living [4] | Weekly earnings in manufacturing [5] | Per capita annual salaries in manufacturing [6] | Bond prices [7] | Stock prices [8] |
|---|---|---|---|---|---|---|---|---|
| 1913 | 72.1 | 45.0 | 62.0 | 57.1 | 47.2 | 49.9 | 99.0 | 43.1 |
| 1914 | 70.3 | 45.4 | 61.1 | 58.2 | 46.7 | 49.8 | 99.5 | 41.4 |
| 1915 | 71.8 | 45.8 | 63.3 | 59.2 | 46.2 | 48.3 | 98.3 | 45.3 |
| 1916 | 88.3 | 49.2 | 69.9 | 63.4 | 50.9 | 51.3 | 99.8 | 54.6 |
| 1917 | 121.3 | 55.7 | 63.7 | 73.3 | 58.2 | 59.2 | 95.9 | 47.1 |
| 1918 | 135.6 | 68.6 | 58.9 | 87.7 | 72.8 | 67.7 | 88.8 | 43.5 |
| 1919 | 143.1 | 80.4 | 63.5 | 100.5 | 87.0 | 78.4 | 88.4 | 50.7 |
| 1920 | 150.4 | 97.6 | 57.6 | 115.6 | 105.6 | 88.2 | 80.0 | 46.1 |
| 1921 | 100.8 | 89.8 | 53.9 | 103.0 | 85.4 | 87.1 | 81.8 | 39.6 |
| 1922 | 99.8 | 86.5 | 63.7 | 96.7 | 87.3 | 84.9 | 93.1 | 48.5 |
| 1923 | 103.9 | 92.9 | 64.1 | 98.4 | 95.6 | 86.6 | 92.4 | 49.5 |
| 1924 | 101.3 | 96.0 | 66.7 | 98.6 | 95.0 | 89.1 | 94.6 | 52.2 |
| 1925 | 106.9 | 96.5 | 75.3 | 101.2 | 97.4 | 91.3 | 96.7 | 64.3 |
| 1926 | 103.2 | 98.2 | 80.0 | 102.0 | 98.5 | 94.7 | 99.1 | 71.6 |
| 1927 | 98.5 | 99.6 | 90.4 | 100.0 | 99.0 | 97.9 | 101.2 | 84.9 |
| 1928 | 99.8 | 100.5 | 115.4 | 99.0 | 100.0 | 103.5 | 101.5 | 107.3 |
| 1929 | 95.4 | 101.6 | 123.5 | 99.0 | 102.6 | 104.0 | 98.2 | 136.5 |
| 1930 | 89.2 | 101.3 | 105.2 | 96.5 | 92.9 | 104.9 | 101.0 | 107.4 |
| 1931 | 75.1 | 97.0 | 77.9 | 88.1 | 81.3 | 99.1 | 97.4 | 67.9 |
| 1932 | 66.9 | 86.3 | 50.0 | 79.4 | 61.3 | 86.6 | 79.3 | 34.9 |
| 1933 | 68.0 | 83.9 | 58.2 | 75.4 | 63.7 | 81.3 | 84.4 | 47.2 |
| 1934 | 77.3 | 93.3 | 67.5 | 78.2 | 72.3 | 84.6 | 98.0 | 51.9 |
| 1935 | 82.6 | 96.6 | 71.7 | 80.2 | 80.0 | 84.0 | 101.7 | 56.2 |
| 1936 | 83.4 | 98.1 | 89.8 | 81.2 | 88.5 | 85.6 | 109.3 | 79.7 |
| 1937 | 89.1 | 106.1 | 87.6 | 83.9 | 97.1 | 93.8 | 102.0 | 80.2 |

[1] Bureau of Labor Statistics' index of wholesale prices of all commodities.
[2] The Federal Reserve Bank of New York index. It is a combined index of hourly earnings, weekly wages, monthly wages, and annual salaries. Covers a sample of the entire economy.
[3] Index of stock prices and bond prices weighted by ratio of capital stock to funded debt as shown by statistics of income, 1926–34, for corporations.
[4] Bureau of Labor Statistics' index of cost of living.
[5] Based upon Paul H. Douglas data, 1913–18 and National Industrial Conference Board, 1919–37.
[6] Based upon National Bureau of Economic Research data, 1913–28, and Department of Commerce data, 1929–37.
[7] Standard Statistics prices of "45 domestic corporate issues."
[8] Standard Statistics' index of the price of 419 stocks (347 industrials, 40 utilities, and 32 rails), listed on the exchange. Data for 1914–17, New York Times stock prices linked to Standard Statistics.

### 21. Wholesale Prices and Hourly and Weekly Earnings in Selected Industries, 1926–37

Table XX gives the data upon which chart IV of chapter VIII is based. The average weekly earnings

[9] U. S. Department of the Interior, *Biennial Survey of Education, 1932–34*, p. 2.

TABLE XX.—*Hourly and weekly earnings, and wholesale prices in automobile, rayon, and knit goods manufacturing industries, 1926–37*

| Year | Automobiles | | | Rayon | | | Knit goods | | |
|---|---|---|---|---|---|---|---|---|---|
| | Hourly earnings (cents per hour) [1] | Weekly earnings (dollars) [1] | Wholesale price index (1926=100) [2] | Hourly earnings (cents per hour) [1] | Weekly earnings (dollars) [1] | Wholesale price index (1926=100) [2] | Hourly earnings (cents per hour) [1] | Weekly earnings (dollars) [1] | Wholesale price index (1926=100) [2] |
| 1926 | 65.9 | 31.43 | 100.0 | | | 100.0 | 43.7 | 19.71 | 100.0 |
| 1927 | 67.6 | 31.36 | 96.1 | | | 82.9 | 45.9 | 21.58 | 91.9 |
| 1928 | 68.1 | 32.51 | 97.1 | | | 83.6 | 46.3 | 21.67 | 90.1 |
| 1929 | 69.5 | 32.48 | 100.0 | 42.1 | 20.79 | 68.4 | 49.6 | 23.58 | 88.5 |
| 1930 | 68.7 | 27.77 | 94.0 | [4] 41.1 | [4] 19.63 | 57.8 | 47.6 | 20.65 | 80.0 |
| 1931 | 68.1 | 25.13 | 89.5 | [4] 40.3 | [4] 18.47 | 41.2 | 44.3 | 18.66 | 60.9 |
| 1932 | 60.9 | 18.50 | 87.1 | 39.8 | 17.31 | 35.3 | 39.7 | 15.26 | 51.6 |
| 1933 | 60.9 | 21.84 | 83.2 | 42.3 | 17.43 | 32.9 | 39.1 | 15.22 | 58.9 |
| 1934 | 73.0 | 24.40 | 87.8 | 50.3 | 18.61 | 31.8 | 52.5 | 18.14 | 63.2 |
| 1935 | 75.5 | 28.68 | 84.1 | 51.4 | 19.48 | 31.2 | 52.0 | 17.96 | 61.8 |
| 1936 | 77.5 | 29.64 | 83.3 | 53.2 | 20.54 | 31.7 | 51.1 | 18.29 | 61.2 |
| 1937 | 90.1 | | 89.3 | 61.8 | | 32.2 | 55.7 | | 65.1 |

[1] National Industrial Conference Board, *Wages, Hours, and Employment in the U. S. A., 1914 to 1936* and subsequent Service Letters of the Board.
[2] Bureau of Labor Statistics Wholesale Prices.
See appendix 6, table I, compiled from Bureau of Labor Statistics' data.
[4] Interpolated between 1929 and 1932 by a straight line interpolation.

for each year is also given, but is not shown on the chart.

## 22. Price and Production Indexes for Ten Major Industries, 1929, 1932, and 1937

TABLE XXI.—*Price and production indexes for 10 major industries*

| Industrial group | Prices (1926=100) [1] | | | Production (1923–25=100) [2] | | |
|---|---|---|---|---|---|---|
| | 1929 | 1932 | 1937 | 1929 | 1932 | 1937 |
| Agricultural implements | 98.7 | 84.9 | 94.0 | [3] 615 | [4] 103 | [3] 617 |
| Motor vehicles | 106.7 | 94.1 | 96.0 | 135 | 35 | 121 |
| Cement | 91.8 | 77.2 | 95.5 | 114 | 51 | 78 |
| Iron and steel | 94.9 | 79.4 | 98.2 | 130 | 31 | 118 |
| Automobile tires | 54.5 | 41.1 | 55.8 | 135 | 78 | 109 |
| Textile products | 90.4 | 54.9 | 76.3 | 115 | 83 | 111 |
| Food products | 99.9 | 61.0 | 85.5 | 97 | 87 | [5] 86 |
| Leather products | 109.1 | 72.9 | 104.6 | 104 | 85 | 113 |
| Petroleum products | 71.3 | 45.4 | 60.5 | 168 | 140 | 202 |
| Agricultural commodities | 104.9 | 48.2 | 86.4 | [6] 101 | [6] 100 | [6] 108 |

[1] Bureau of Labor Statistics' *Wholesale Prices*, 1933, p. 12; 1937, p. 3.
[2] Federal Reserve Board's indexes of production, except as elsewhere specified.
[3] Based on annual production of farm equipment as compiled by the Bureau of the Census, U. S. Department of Commerce. Figures are expressed in millions of 1926 dollars, divided by Bureau of Labor Statistics price index.
[4] Interpolated from gross income of corporations manufacturing agricultural implements, given in the *Statistics of Income*, Bureau of Internal Revenue (value in millions of 1926 dollars).
[5] Constructed from 3 food indexes as given by the Federal Reserve Board: (1) slaughtering and packing of meats—weight 0.45; (2) wheat flour—weight 0.18, (3) sugar melting—weight 0.17.
[6] *Agricultural Statistics*, 1938, p. 428. Includes both crops and livestock. Index base, 1924–29=100.

TABLE XXII.—*Comparison of price changes and production changes during depression and recovery for 10 major industries* [1]

| Industry group | Percent drop, 1929–32 | | Percent recovery, 1932–37 | |
|---|---|---|---|---|
| | Prices | Production | Prices | Production |
| Motor vehicles | 12 | 74 | 2 | 64 |
| Agricultural implements | 14 | 84 | 9 | 84 |
| Cement | 16 | 55 | 20 | 24 |
| Iron and steel | 16 | 76 | 20 | 67 |
| Automobile tires | 25 | 42 | 37 | 24 |
| Leather and products | 33 | 18 | 29 | 27 |
| Petroleum products | 36 | 17 | 21 | 37 |
| Textile products | 39 | 28 | 24 | 24 |
| Food products | 39 | 10 | 24 | −1 |
| Agricultural commodities | 54 | 1 | 36 | 8 |

[1] Based on table I, above. The decline in 1929–32 is expressed as a percent of 1929. The recovery in 1932–37 is expressed as a percent of 1929.

Table XXI gives indexes of prices and production for ten industries for the three years, 1929, 1932, and 1937. Table XXII gives the percent changes in prices and production during depression and recovery.

## 23. Monthly Price Indexes for Ten Price Frequency Groups, 1926–1938

Chart XXVI of chapter VIII gives the price indexes for 5 frequency groups. These 5 groups are derived from a combination of 10 frequency groups shown in appendix 2, table I, with certain modifications which are described below. Group A consists of a geometric average of groups I and II; group B of groups III and IV; group C of groups V and VI; group D of groups VII and VIII; and group E of IX and X. The indexes for the 10 frequency groups are shown in the table below by months from 1926 to 1938. The total number of Bureau of Labor Statistics' price items used in constructing these indexes is 731. This number differs from the number of items used in deriving the annual indexes for the frequency groups shown in chart XXV and given in appendix 2, table I, in that 163 separate items were used in place of the 49 composite items shown in table I. For example, in the annual index, 1 butter composite item was used to represent 18 separate butter items; in the indexes presented in table XXIII, the 18 butter-price series were used instead of the 1 composite representing these series. The difference of 114 items between the 2 series is therefore due to the inclusion of the individual items making up the composites in the monthly series.

The number of items used in each of the 10 groups is as follows: Group I—76; group II—73; group III—74; group IV—70; group V—76; group VI—72; group VII—77; group VIII—73; group IX—77; and group X—63. The price index for each group was obtained by averaging the logarithms of the individual price indexes corresponding to the items within the group.

TABLE XXIII – *Price indexes for ten frequency groups*[1] *(731 commodities) by months for the years 1926–38*

[1926–29 = 100]

| Year and group | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *1926* | | | | | | | | | | | | |
| I | 100.8 | 100.8 | 100.8 | 100.6 | 100.7 | 100.7 | 100.9 | 101.1 | 101.2 | 101.3 | 101.2 | 101.2 |
| II | 102.6 | 102.8 | 102.7 | 102.7 | 102.8 | 102.9 | 102.7 | 102.5 | 102.7 | 102.7 | 102.6 | 102.3 |
| III | 104.0 | 104.2 | 104.2 | 104.2 | 103.2 | 102.6 | 102.3 | 102.5 | 102.4 | 102.2 | 102.1 | 101.1 |
| IV | 104.7 | 104.6 | 104.1 | 103.6 | 102.6 | 102.6 | 102.0 | 101.6 | 101.6 | 101.7 | 101.3 | 101.0 |
| V | 106.4 | 105.9 | 105.5 | 105.4 | 104.8 | 104.6 | 103.8 | 103.3 | 104.2 | 104.4 | 104.7 | 103.9 |
| VI | 105.3 | 104.3 | 104.4 | 103.5 | 102.1 | 101.6 | 100.9 | 100.1 | 100.7 | 100.2 | 100.3 | 99.8 |
| VII | 104.2 | 103.5 | 102.5 | 101.7 | 100.8 | 100.7 | 101.0 | 100.7 | 100.7 | 100.5 | 99.3 | 98.4 |
| VIII | 113.1 | 110.7 | 107.3 | 106.5 | 105.5 | 104.7 | 102.6 | 102.5 | 103.9 | 102.3 | 99.9 | 98.4 |
| IX | 117.1 | 113.0 | 108.5 | 106.2 | 106.0 | 105.6 | 103.0 | 102.6 | 102.9 | 102.1 | 100.7 | 100.6 |
| X | 107.5 | 103.8 | 100.0 | 98.8 | 98.9 | 97.5 | 96.8 | 96.2 | 98.3 | 99.0 | 97.8 | 99.1 |
| *1927* | | | | | | | | | | | | |
| I | 100.4 | 100.4 | 100.3 | 100.3 | 100.3 | 100.2 | 100.1 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| II | 100.7 | 100.8 | 100.6 | 100.6 | 100.6 | 100.6 | 100.3 | 100.3 | 100.3 | 100.2 | 100.4 | 100.2 |
| III | 100.5 | 100.3 | 99.9 | 100.1 | 100.1 | 100.0 | 100.2 | 100.0 | 100.2 | 100.0 | 100.0 | 100.0 |
| IV | 100.3 | 100.2 | 99.7 | 99.4 | 98.9 | 99.2 | 99.4 | 99.9 | 100.3 | 100.2 | 99.9 | 99.8 |
| V | 102.5 | 102.1 | 101.8 | 101.7 | 100.7 | 99.8 | 100.1 | 100.3 | 100.3 | 100.0 | 99.7 | 99.6 |
| VI | 100.3 | 100.3 | 100.2 | 100.1 | 99.4 | 98.8 | 98.2 | 99.1 | 100.3 | 99.8 | 99.1 | 98.6 |
| VII | 98.7 | 98.6 | 98.0 | 97.3 | 97.0 | 97.1 | 97.1 | 98.5 | 99.7 | 100.1 | 100.5 | 100.4 |
| VIII | 98.4 | 98.1 | 98.2 | 97.3 | 96.8 | 97.2 | 96.8 | 97.8 | 97.5 | 96.9 | 98.1 | 97.9 |
| IX | 101.0 | 99.8 | 97.9 | 98.2 | 97.7 | 97.2 | 95.3 | 95.0 | 96.9 | 98.8 | 98.7 | 98.4 |
| X | 99.1 | 98.1 | 96.2 | 96.8 | 97.8 | 98.3 | 98.3 | 99.8 | 102.0 | 102.2 | 102.9 | 103.8 |
| *1928* | | | | | | | | | | | | |
| I | 99.9 | 100.0 | 100.0 | 100.2 | 100.2 | 100.2 | 99.5 | 99.5 | 99.5 | 99.5 | 99.5 | 99.5 |
| II | 99.8 | 99.8 | 99.2 | 98.8 | 98.9 | 98.8 | 98.8 | 98.8 | 98.8 | 98.7 | 98.4 | 98.3 |
| III | 100.2 | 100.2 | 100.0 | 100.2 | 100.0 | 99.6 | 99.4 | 99.4 | 99.1 | 99.0 | 99.1 | 98.5 |
| IV | 98.9 | 99.3 | 99.6 | 99.2 | 99.4 | 99.4 | 99.1 | 99.6 | 99.7 | 99.5 | 99.4 | 99.2 |
| V | 98.7 | 98.6 | 98.6 | 98.7 | 97.8 | 97.7 | 97.8 | 97.6 | 97.6 | 97.6 | 98.2 | 98.7 |
| VI | 99.7 | 100.1 | 99.8 | 99.4 | 99.3 | 99.9 | 100.2 | 100.2 | 100.3 | 100.6 | 100.5 | 99.5 |
| VII | 99.4 | 100.0 | 99.1 | 99.2 | 99.4 | 99.4 | 99.4 | 98.7 | 98.2 | 100.0 | 101.9 | 102.2 |
| VIII | 98.6 | 98.3 | 97.7 | 96.3 | 100.3 | 99.0 | 98.5 | 99.3 | 100.3 | 99.9 | 99.6 | 99.96 |
| IX | 99.1 | 98.4 | 99.6 | 100.3 | 100.6 | 97.7 | 98.4 | 98.3 | 101.1 | 99.8 | 100.9 | 100.3 |
| X | 104.8 | 102.9 | 103.9 | 105.6 | 106.9 | 103.3 | 101.8 | 99.0 | 100.6 | 99.5 | 99.7 | 99.6 |
| *1929* | | | | | | | | | | | | |
| I | 99.2 | 99.2 | 99.2 | 99.3 | 99.0 | 99.0 | 98.2 | 98.2 | 98.2 | 98.5 | 98.5 | 98.6 |
| II | 98.5 | 98.4 | 98.5 | 98.5 | 97.8 | 97.7 | 97.4 | 97.4 | 97.4 | 97.6 | 97.7 | 97.7 |
| III | 97.9 | 97.9 | 97.3 | 97.4 | 97.4 | 97.4 | 97.3 | 97.3 | 97.2 | 97.5 | 97.5 | 97.5 |
| IV | 98.0 | 98.7 | 98.0 | 98.5 | 98.1 | 98.1 | 98.3 | 98.3 | 98.2 | 98.0 | 97.7 | 97.5 |
| V | 98.1 | 97.4 | 97.1 | 97.0 | 96.8 | 96.8 | 95.9 | 96.1 | 96.1 | 96.5 | 96.6 | 95.3 |
| VI | 99.5 | 99.6 | 99.4 | 99.8 | 99.9 | 99.6 | 98.9 | 97.9 | 97.6 | 97.0 | 96.6 | 96.3 |
| VII | 102.0 | 101.9 | 102.3 | 101.6 | 100.5 | 99.7 | 99.5 | 100.2 | 100.2 | 100.1 | 99.6 | 98.7 |
| VIII | 100.2 | 99.1 | 99.7 | 100.0 | 98.6 | 97.6 | 98.1 | 98.5 | 99.4 | 99.1 | 97.3 | 95.4 |
| IX | 100.7 | 101.7 | 100.9 | 97.9 | 95.0 | 94.4 | 97.2 | 97.2 | 98.6 | 96.3 | 92.3 | 90.4 |
| X | 100.4 | 100.7 | 98.5 | 95.9 | 93.7 | 94.8 | 100.2 | 100.8 | 102.6 | 100.8 | 96.9 | 96.0 |
| *1930* | | | | | | | | | | | | |
| I | 97.9 | 97.9 | | 97.9 | 97.7 | 97.8 | 97.8 | 97.8 | 97.8 | 98.0 | 98.1 | 97.6 |
| II | 97.0 | 96.9 | 96.5 | 96.0 | 95.9 | 95.8 | 95.3 | 95.1 | 94.9 | 94.9 | 94.7 | 93.9 |
| III | 96.3 | 96.5 | 96.4 | 96.3 | 96.2 | 95.8 | 95.1 | 94.5 | 93.4 | 92.8 | 93.1 | 92.3 |
| IV | 97.3 | 96.3 | 95.1 | 94.7 | 93.8 | 93.3 | 92.4 | 91.7 | 91.3 | 89.5 | 88.5 | 87.6 |
| V | 94.7 | 94.2 | 93.6 | 93.0 | 92.3 | 91.3 | 89.8 | 89.2 | 89.2 | 87.2 | 86.4 | 85.4 |
| VI | 95.6 | 95.2 | 94.3 | 93.4 | 92.3 | 90.9 | 89.5 | 88.3 | 88.2 | 86.6 | 85.5 | 84.8 |
| VII | 97.1 | 96.4 | 94.9 | 92.8 | 90.5 | 89.3 | 87.8 | 86.0 | 85.5 | 83.9 | 81.7 | 80.7 |
| VIII | 94.0 | 91.9 | 89.9 | 89.2 | 87.6 | 86.2 | 84.2 | 82.1 | 81.6 | 79.4 | 74.6 | 72.6 |
| IX | 88.2 | 85.8 | 82.7 | 82.5 | 79.2 | 78.2 | 78.2 | 73.3 | 71.5 | 69.8 | 68.8 | 65.7 |
| X | 92.2 | 88.9 | 85.4 | 86.5 | 82.6 | 78.1 | 74.3 | 76.3 | 75.5 | 72.3 | 69.1 | 65.6 |
| *1931* | | | | | | | | | | | | |
| I | 97.5 | 97.4 | 97.4 | 97.1 | 97.0 | 97.0 | 96.8 | 96.4 | 95.7 | 95.3 | 95.3 | 95.1 |
| II | 92.9 | 92.6 | 92.4 | 91.2 | 90.6 | 90.6 | 90.1 | 89.2 | 89.1 | 88.2 | 88.0 | 87.5 |
| III | 90.9 | 90.0 | 89.7 | 89.7 | 89.2 | 89.1 | 88.3 | 87.5 | 87.4 | 86.7 | 86.0 | 84.2 |
| IV | 85.6 | 84.9 | 84.3 | 84.0 | 83.6 | 82.5 | 81.7 | 81.4 | 81.0 | 79.9 | 79.1 | 78.0 |
| V | 82.6 | 81.5 | 81.0 | 80.0 | 79.7 | 79.2 | 77.6 | 77.9 | 77.1 | 76.1 | 75.1 | 73.7 |
| VI | 83.5 | 83.1 | 82.5 | 81.3 | 80.4 | 79.5 | 77.4 | 77.9 | 77.1 | 76.8 | 76.2 | 75.8 |
| VII | 79.2 | 78.4 | 77.0 | 75.5 | 74.0 | 71.4 | 70.6 | 70.5 | 69.7 | 67.6 | 66.7 | 66.1 |
| VIII | 71.5 | 70.3 | 70.1 | 69.1 | 66.7 | 63.8 | 63.2 | 61.7 | 59.9 | 57.5 | 57.7 | 56.6 |
| IX | 63.5 | 61.0 | 61.1 | 58.4 | 55.8 | 51.2 | 55.3 | 55.0 | 52.9 | 52.5 | 53.1 | 50.6 |
| X | 63.5 | 60.6 | 61.8 | 59.0 | 56.7 | 55.3 | 54.9 | 54.8 | 54.7 | 54.1 | 56.1 | 52.4 |
| *1932* | | | | | | | | | | | | |
| I | 94.5 | 94.4 | 94.4 | 94.3 | 93.3 | 93.2 | 92.8 | 92.7 | 93.0 | 92.2 | 91.9 | 91.7 |
| II | 86.7 | 85.7 | 85.7 | 85.6 | 85.2 | 84.3 | 83.6 | 83.3 | 83.0 | 82.9 | 82.4 | 79.9 |
| III | 83.7 | 83.6 | 83.3 | 82.5 | 81.8 | 81.2 | 79.7 | 79.5 | 79.5 | 80.0 | 79.5 | 72.0 |
| IV | 77.3 | 76.7 | 76.4 | 75.9 | 75.4 | 74.7 | 70.6 | 73.1 | 73.1 | 73.0 | 72.3 | 65.3 |
| V | 72.5 | 71.6 | 71.3 | 69.7 | 68.4 | 67.0 | 65.8 | 65.8 | 66.5 | 66.9 | 66.4 | 64.7 |
| VI | 74.2 | 73.4 | 73.0 | 72.1 | 70.9 | 69.1 | 67.9 | 70.3 | 69.1 | 69.2 | 68.6 | 67.7 |
| VII | 64.4 | 63.4 | 62.8 | 62.0 | 60.9 | 59.7 | 58.3 | 58.4 | 59.8 | 60.0 | 59.0 | 58.2 |
| VIII | 54.6 | 53.3 | 52.6 | 51.3 | 49.1 | 47.6 | 46.8 | 48.5 | 50.6 | 49.8 | 48.7 | 47.1 |
| IX | 48.1 | 46.1 | 46.2 | 44.4 | 41.6 | 40.1 | 41.2 | 44.0 | 45.4 | 44.0 | 41.2 | 43.6 |
| X | 50.0 | 48.2 | 47.0 | 41.8 | 42.3 | 40.2 | 41.3 | 44.4 | 45.8 | 43.5 | 43.0 | 41.7 |

[1] The monthly indexes are based on 731 price items of the Bureau of Labor Statistics. These 731 items consist of the 617 price items listed in appendix 2, table I, and classified in each of the 10 frequency groups in table I, less 49 of these 617 items, which are composite items and for which were substituted the 163 component items of the 49 composites. The following is the list of the 163 items by code numbers and the frequency group in which each item belongs; the name and classification of each item is given in appendix 2, table I: group I: 425–426–702; group II: 565–566–703; group III: 190–192–194–205–269–567; group IV: 196–198–199–201–341–342–351–352–568–669; group V: 195–200–202–205–207–210–295–296–297–298–667; Group VI: 204–261–271–272–303–304–318–319–320–321–350–457–458–459–574–575–576–670–671; group VII: 59–60–61–66–67–203–222–223–262–270–273–427–428–430–432–666–668; group VIII: 19–33–40–41–62–65–104–109–111–142–224–263–283–325–326; group IX: 13–18–21–29–32–55–56–63–64–70–74–75–76–79–80–83–84–87–88–103–108–110–111–112–274–282–284–285–299–300–306–308–360–361–752–753; group X: 2–3–6–7–8–9–10–11–14–15–16–17–22–23–24–25–26–27–28–31–57–68–69–71–72–73–77–78–81–82–85–86–105–106–107–212–213–281–301–302–307–359–751.

TABLE XXIII.—*Price indexes for ten frequency groups (731 commodities) by months for the years 1926–38*—Continued

| Year and group | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *1933* | | | | | | | | | | | | |
| I | 91.6 | 91.2 | 91.1 | 91.5 | 91.5 | 91.5 | 91.5 | 91.8 | 92.0 | 92.9 | 90.0 | 93.1 |
| II | 81.4 | 80.7 | 80.8 | 80.5 | 79.9 | 80.0 | 81.4 | 82.8 | 84.6 | 86.2 | 86.2 | 86.4 |
| III | 78.2 | 77.8 | 77.2 | 76.8 | 76.9 | 78.3 | 81.2 | 83.2 | 85.2 | 86.3 | 87.3 | 88.4 |
| IV | 71.0 | 70.6 | 70.3 | 70.1 | 71.1 | 73.6 | 76.8 | 80.5 | 81.8 | 82.6 | 83.3 | 83.7 |
| V | 63.9 | 63.1 | 62.8 | 62.3 | 63.9 | 67.1 | 71.1 | 75.3 | 77.2 | 77.1 | 77.1 | 77.1 |
| VI | 67.0 | 66.1 | 66.0 | 66.1 | 68.9 | 73.3 | 77.3 | 82.1 | 83.5 | 84.2 | 84.0 | 84.3 |
| VII | 57.1 | 55.5 | 55.6 | 56.3 | 60.0 | 64.0 | 68.8 | 71.9 | 72.9 | 73.0 | 73.5 | 73.6 |
| VIII | 45.9 | 44.6 | 45.8 | 47.5 | 53.9 | 58.3 | 64.6 | 66.7 | 66.2 | 65.3 | 65.6 | 66.3 |
| IX | 41.2 | 39.4 | 40.7 | 41.7 | 48.9 | 53.9 | 61.0 | 59.2 | 58.2 | 56.7 | 57.0 | 55.3 |
| X | 40.0 | 37.9 | 40.0 | 43.6 | 49.9 | 54.0 | 62.2 | 57.2 | 57.7 | 55.5 | 56.7 | 54.1 |
| *1934* | | | | | | | | | | | | |
| I | 93.3 | 93.4 | 93.5 | 93.5 | 94.7 | 94.5 | 94.6 | 94.7 | 94.8 | 94.7 | 94.7 | 95.3 |
| II | 87.0 | 87.1 | 87.1 | 87.5 | 87.7 | 87.8 | 87.2 | 86.3 | 86.7 | 86.2 | 86.1 | 87.3 |
| III | 88.2 | 88.1 | 88.4 | 88.9 | 88.7 | 88.6 | 88.2 | 87.2 | 84.1 | 86.2 | 85.9 | 86.0 |
| IV | 84.8 | 84.7 | 85.0 | 84.9 | 85.0 | 84.7 | 84.1 | 83.8 | 83.7 | 83.1 | 82.5 | 82.5 |
| V | 78.3 | 78.3 | 78.5 | 78.2 | 77.7 | 77.3 | 76.9 | 76.3 | 76.0 | 75.7 | 75.3 | 75.3 |
| VI | 83.4 | 83.1 | 83.6 | 83.4 | 84.2 | 84.5 | 83.8 | 83.3 | 83.5 | 83.2 | 82.7 | 82.7 |
| VII | 73.7 | 74.5 | 74.6 | 74.8 | 74.6 | 74.4 | 73.6 | 73.6 | 74.4 | 74.5 | 74.0 | 74.0 |
| VIII | 68.0 | 69.8 | 70.1 | 70.0 | 70.3 | 69.9 | 70.2 | 70.7 | 72.9 | 72.2 | 72.4 | 73.2 |
| IX | 57.3 | 61.2 | 60.9 | 59.5 | 58.7 | 58.9 | 58.8 | 62.1 | 63.3 | 62.0 | 63.4 | 64.8 |
| X | 56.9 | 60.5 | 60.4 | 58.3 | 59.6 | 62.2 | 61.7 | 66.2 | 67.7 | 67.0 | 68.8 | 70.3 |
| *1935* | | | | | | | | | | | | |
| I | 95.4 | 95.8 | 95.6 | 95.2 | 95.4 | 95.5 | 95.4 | 95.3 | 95.4 | 95.3 | 96.0 | 96.0 |
| II | 85.8 | 85.6 | 85.6 | 85.4 | 85.2 | 85.1 | 85.0 | 84.6 | 85.6 | 85.6 | 85.6 | 85.6 |
| III | 86.3 | 86.2 | 86.3 | 86.2 | 86.5 | 87.3 | 87.8 | 88.2 | 87.8 | 88.0 | 88.1 | 87.5 |
| IV | 82.3 | 82.3 | 82.4 | 81.7 | 81.7 | 81.9 | 81.7 | 81.7 | 81.7 | 82.6 | 83.8 | 84.0 |
| V | 75.3 | 75.5 | 75.5 | 75.3 | 75.7 | 76.2 | 76.4 | 76.9 | 77.0 | 77.6 | 78.1 | 78.2 |
| VI | 82.9 | 83.1 | 83.3 | 82.8 | 82.4 | 82.4 | 82.8 | 82.7 | 83.0 | 83.3 | 83.1 | 82.9 |
| VII | 74.6 | 75.0 | 75.1 | 74.6 | 75.2 | 75.8 | 75.2 | 74.8 | 75.9 | 77.6 | 78.8 | 79.0 |
| VIII | 75.3 | 75.4 | 75.2 | 74.9 | 76.3 | 74.9 | 71.5 | 70.7 | 73.1 | 75.6 | 76.6 | 76.4 |
| IX | 68.0 | 68.2 | 65.8 | 67.2 | 66.1 | 64.6 | 63.7 | 65.0 | 67.5 | 69.7 | 71.3 | 71.5 |
| X | 73.8 | 74.6 | 70.8 | 74.0 | 70.5 | 66.7 | 67.4 | 67.9 | 70.3 | 73.1 | 74.2 | 74.6 |
| *1936* | | | | | | | | | | | | |
| I | 96.5 | 96.5 | 96.5 | 96.2 | 96.0 | 95.9 | 95.9 | 95.9 | 95.8 | 95.5 | 95.3 | 95.4 |
| II | 86.0 | 86.1 | 85.8 | 85.7 | 85.8 | 86.2 | 86.4 | 87.1 | 87.1 | 87.1 | 87.4 | 87.6 |
| III | 87.8 | 87.7 | 87.5 | 87.6 | 87.6 | 87.2 | 87.1 | 87.1 | 87.3 | 87.6 | 87.8 | 88.5 |
| IV | 84.0 | 83.9 | 84.0 | 84.3 | 84.2 | 84.3 | 84.3 | 84.4 | 84.7 | 84.7 | 85.1 | 86.3 |
| V | 77.9 | 78.2 | 78.2 | 78.1 | 77.9 | 77.7 | 77.5 | 77.6 | 77.8 | 78.3 | 78.6 | 80.2 |
| VI | 82.2 | 81.9 | 81.7 | 81.7 | 81.1 | 81.2 | 82.2 | 82.5 | 83.0 | 83.7 | 84.3 | 86.1 |
| VII | 78.8 | 78.5 | 78.4 | 77.8 | 77.6 | 77.0 | 78.0 | 79.5 | 80.3 | 80.9 | 82.3 | 85.0 |
| VIII | 75.2 | 74.0 | 73.7 | 74.9 | 73.8 | 74.3 | 76.3 | 78.0 | 78.4 | 78.4 | 80.4 | 84.2 |
| IX | 70.6 | 69.6 | 66.8 | 67.4 | 65.5 | 67.6 | 71.9 | 74.5 | 74.1 | 74.0 | 76.2 | 79.7 |
| X | 73.3 | 73.8 | 69.5 | 68.6 | 66.1 | 68.5 | 75.1 | 78.5 | 78.6 | 78.4 | 79.9 | 84.1 |
| *1937* | | | | | | | | | | | | |
| I | 95.7 | 96.3 | 96.7 | 97.2 | 98.8 | 99.0 | 99.1 | 99.2 | 99.2 | 99.2 | 100.0 | 99.9 |
| II | 88.2 | 88.7 | 89.3 | 89.4 | 90.5 | 91.1 | 92.0 | 92.7 | 92.5 | 92.5 | 92.7 | 92.7 |
| III | 90.1 | 90.7 | 91.5 | 93.7 | 94.5 | 94.5 | 94.7 | 94.9 | 95.0 | 94.3 | 94.2 | 93.2 |
| IV | 87.4 | 88.2 | 89.1 | 89.9 | 90.6 | 90.8 | 90.7 | 90.3 | 90.5 | 90.0 | 89.1 | 88.4 |
| V | 80.9 | 81.5 | 82.7 | 84.8 | 85.3 | 86.1 | 86.4 | 85.9 | 86.2 | 85.5 | 84.5 | 83.6 |
| VI | 88.7 | 89.8 | 91.8 | 92.8 | 93.0 | 92.7 | 92.9 | 92.8 | 92.0 | 91.4 | 89.9 | 88.4 |
| VII | 87.2 | 88.4 | 90.6 | 91.2 | 90.2 | 89.4 | 88.8 | 87.6 | 86.3 | 84.9 | 81.9 | 79.5 |
| VIII | 87.8 | 89.1 | 91.7 | 91.8 | 89.5 | 86.9 | 84.6 | 83.8 | 81.8 | 78.6 | 74.5 | 71.8 |
| IX | 82.3 | 82.0 | 84.5 | 82.9 | 80.4 | 78.6 | 78.9 | 76.3 | 74.8 | 72.9 | 69.5 | 67.5 |
| X | 86.2 | 85.1 | 87.3 | 86.7 | 83.2 | 80.3 | 80.1 | 76.4 | 77.0 | 73.3 | 69.7 | 68.2 |
| *1938* | | | | | | | | | | | | |
| I | 94.3 | 94.3 | 97.5 | 97.5 | 97.4 | 96.9 | 96.6 | 96.8 | 96.5 | 96.2 | 94.7 | 94.7 |
| II | 92.9 | 92.9 | 93.1 | 92.8 | 92.8 | 92.9 | 93.4 | 92.3 | 92.6 | 92.5 | 92.3 | 92.3 |
| III | 93.6 | 92.8 | 92.5 | 92.3 | 91.3 | 91.2 | 90.5 | 90.3 | 90.0 | 90.0 | 90.1 | 90.0 |
| IV | 87.5 | 86.9 | 86.4 | 85.8 | 85.4 | 85.2 | 84.6 | 84.7 | 84.1 | 84.0 | 83.4 | 83.6 |
| V | 82.6 | 81.8 | 81.6 | 80.9 | 79.6 | 78.0 | 77.3 | 77.5 | 77.3 | 77.2 | 77.0 | 77.0 |
| VI | 87.6 | 86.5 | 85.3 | 83.4 | 82.7 | 81.5 | 80.7 | 80.9 | 81.9 | 81.8 | 82.0 | 82.0 |
| VII | 79.5 | 77.6 | 76.7 | 75.5 | 74.8 | 73.5 | 73.4 | 73.2 | 72.6 | 73.3 | 73.8 | 73.2 |
| VIII | 70.6 | 68.4 | 67.8 | 66.5 | 65.7 | 65.4 | 66.8 | 68.4 | 68.1 | 68.5 | 69.2 | 68.6 |
| IX | 65.9 | 63.9 | 63.7 | 61.4 | 60.4 | 60.5 | 61.6 | 59.1 | 58.8 | 59.9 | 61.4 | 61.2 |
| X | 67.4 | 65.2 | 64.0 | 60.9 | 59.3 | 59.5 | 59.7 | 57.5 | 58.3 | 58.9 | 59.5 | 60.5 |

## 24. Production Indexes Corresponding to the Five Price Frequency Groups, 1925–1935

This section describes the derivation of five indexes of production corresponding to the five price frequency groups shown in table XXIV.[10] A brief discussion is also given of the reliability of the production indexes derived.

[10] The National Industrial Conference Board has published recently (The Conference Board Bulletin, Vol. XIII, No. 5, Feb. 20, 1939) data based on production indexes corresponding to 264 commodities from the Bureau of Labor Statistics' wholesale price specifications for the years 1929 and 1933. For the 5 groups presented above production indexes have been used corresponding to 315 commodities, these commodities being represented one or more times in the list of the Bureau of Labor Statistics.

The price groups are arranged in order of frequeney of price change, group A representing the price items having the least frequeney of price changes and group E representing those with the greatest frequeney of price changes. The actual price frequency range for each group is shown in chart XXV of chapter VIII.

For each of the five price groups an effort was made to get from available data, production series corresponding to as many price items as possible. The production series associated with each group were then combined to obtain a production index corresponding to the group. For reasons which appear below the correspondence between the price and production series

TABLE XXIV.—*Price and production indexes for 5 price frequency groups, 1925–35*

[1926–29 = 100]

| Year | Group A | | Group B | | Group C | | Group D | | Group E | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Price | Production | Price | Production | Price | Production | Price | Production | Price | Production |
| 1925 | 101.6 | 93.9 | 102.9 | 94.4 | 107.9 | 93.5 | 106.5 | 92.5 | 110.6 | 97.6 |
| 1926 | 101.2 | 95.3 | 103.3 | 96.1 | 103.4 | 100.3 | 101.8 | 100.3 | 103.0 | 99.2 |
| 1927 | 100.2 | 99.4 | 99.8 | 98.2 | 100.6 | 94.9 | 98.6 | 94.7 | 97.7 | 97.6 |
| 1928 | 100.8 | 97.8 | 99.2 | 100.1 | 98.3 | 96.6 | 99.6 | 99.2 | 99.9 | 103.3 |
| 1929 | 98.8 | 107.5 | 97.5 | 105.6 | 97.7 | 108.2 | 99.8 | 105.8 | 99.3 | 99.9 |
| 1930 | 107.0 | 89.2 | 94.7 | 93.9 | 90.7 | 89.4 | 88.9 | 92.6 | 79.5 | 99.1 |
| 1931 | 93.7 | 82.9 | 87.0 | 81.0 | 79.9 | 71.0 | 73.9 | 76.9 | 59.0 | 104.9 |
| 1932 | 89.5 | 51.0 | 79.3 | 71.0 | 70.1 | 58.8 | 62.0 | 64.9 | 46.3 | 100.3 |
| 1933 | 87.8 | 74.5 | 79.9 | 76.2 | 73.3 | 71.9 | 66.9 | 73.5 | 54.0 | 90.4 |
| 1934 | 91.2 | 66.2 | 86.0 | 81.3 | 81.2 | 76.8 | 75.6 | 82.1 | 66.4 | 74.9 |
| 1935 | 91.3 | 92.3 | 84.8 | 89.8 | 81.0 | 86.3 | 77.5 | 87.8 | 72.1 | 94.4 |
| Percent coverage | | 50 | | 65 | | 90 | | 85 | | 80 |

[1] Figures for intercensal years for this group are less reliable than those for census years because suitable data for interpolation were not available.

NOTE. Group A represents the group in which prices have changed the least, while Group E represents the prices changed most frequently. For details of the composition of the groups see ch. VIII and appendix 2.

was approximate throughout with a tendency for the production series used in group E to represent the price series better than was the case as one approached group A. The coverage of each of the final production indexes is discussed below along with the comments on the suitability of the production series used in constructing the indexes.

Many of the production indexes used are only approximate representations of the production of the commodities to which they correspond, and the production indexes are therefore subject to a number of qualifications.

While each price index is associated with a specific production index, which is defined in some detail, the best production index available without an exhaustive search of original compilation is generally a wide class including the proper item along with a great variety of other items selling within a large price range, and appealing to different types of customers. For example, the price index includes men's mocha gloves, unlined; but it is represented in the appropriate production index as all leather gloves for men, lined and unlined, including some inexpensive "utility gloves" and some costly fine gloves as well as "fad gloves" or "one season styles." Again, the production index taken to represent plain standard concrete blocks, 8 by 8 by 16 inches, includes all block and tile except roofing tile. The price index is for a cheap standard construction material for foundations and garages; but the production series includes many new and expensive tiles and floor blocks and a large volume of specialty blocks of many kinds. On the other hand, all of the wheat series are in the last group and the wheat production of the entire country was used in the production index.

A difficulty is presented in estimating the coverage by estimating the yearly production of commodities in the price lists for which production series could not be obtained. The coverage is merely a ratio of the estimate of all the value of production included in the production index to the estimate of all the value of production that could have been included if the data had been available. When it is stated that the "coverage" of group A is almost one-half, it indicates that a little over half of the estimated value of the articles whose price series fall in group A were nowhere represented in the production index. The 45 or 50 percent which were represented were badly represented, as in the case of the gloves and the concrete blocks cited above. However, in group E, not only was the proportion of the estimated value not covered small (20 percent), but the 80 percent which was represented in the production index was, on the whole, well represented, as in the case of the wheat crop of the United States.

The production series which were used in the composition of the production indexes were derived from several sources. The production of manufactured products generally were obtained from the *Census of Manufactures*, United States Bureau of the Census. Ores and minerals were taken from *Minerals Yearbooks*, and *Mineral Resources of the United States*, United States Bureau of Mines. Agricultural commodities were obtained from *Agricultural Statistics*, United States Department of Agriculture, while products like tin, which are largely imported, were obtained from *Foreign Commerce and Navigation*, United States Department of Commerce.

All the production series went into the five production indexes in the form of values in 1926 dollars. The two principal methods of getting the series in this form were (1) weighting the series on actual production in physical units by the actual price in 1926 dollars; and (2) dividing the value of production in current dollars by the price relative on a 1926 base. The first method was used where possible.

In some cases the production was available for some years but not all; in these cases the production figures were used for the years for which they were available, and the missing years were filled in by using the deflated value figures. Interpolations were made by the use of an interpolating series. A scatter diagram was made between the series to be interpolated and the interpolating series, and a straight or curved regression line was drawn free hand. Ratios of the point to the regression line were plotted on a time scale and a smooth free-hand curve was drawn through the points obtained. Time was included as an independent variable where the introduction of time as a factor materially reduced the residuals.

After all of the series were expressed in terms of value

in 1926 dollars they were added and the resulting series was converted into a series of index numbers.

The five index series thus computed are the basic indexes of production. In practice, however, it was found necessary to employ another step. Because of the large number of series drawn from the *Census of Manufactures* and the lack of interpolating series for some of these, the odd years were represented by many more series than the even years. A link relative procedure of index construction would have had the effect of discarding all of the series in which the even years were missing. Therefore, a basic index was constructed for each group from the link relatives of the comparable data in successive census (odd) years. This index was interpolated, by the method described above, by an index based on the link relatives of comparable data in directly succeeding years. This type of chain index is useful where comparable data are available for only short periods. For example, the change in the schedule of the *Census of Manufactures* in 1933 offered no difficulty where the Census presented comparable data for the preceding and succeeding censuses.

After the odd-year index was filled in by interpolation from the series for all years the indexes were complete and it remained simply to put them on a 1926–29 base.

### 25. Holdings by the 250 Large Corporations of More Than 10 Percent of the Voting Stock of the 200 Largest Non-Financial Corporations

The basic materials upon which table V in chapter IX is based were published by the Securities and Exchange Commission under the title, *Official Summary of Officers, Directors, and Principal Stockholders, as of December 31, 1935*, and by Moody's Investor's Service in *Moody's Investment Manuals, 1936*. For each of the 200 largest nonfinancial corporations in 1935 (listed in appendix 10) the total number of votes outstanding was obtained by multiplying the number of shares of each issue outstanding by the number of votes per share and adding the votes thus obtained. Then the holdings of corporations in each of the 200 nonfinancial corporations, which were listed in the *Official Summary*, were examined to determine whether any corporation held more than one-tenth of the computed votes outstanding.

For the purpose of measuring the number of votes outstanding as of December 31, 1935, due account was taken of contingency voting rights. It is a usual circumstance that preferred issues are without vote unless a specified number of dividends are in default. In these cases the dividend records of the corporations were examined and the number of possible votes computed accordingly. Shares reacquired and in the treasury of the corporation were assumed to be without vote in all cases.

A vote was defined as a vote at the annual meeting of the shareholders on a general issue, i. e., on some matter other than the election of directors or the issue of new shares of some security. For both of these questions the voting power is often distributed very differently from what is found on votes for general issues of policy.

The results of this procedure yielded an incomplete tabulation. There were three major reasons for this:

(1) The Securities and Exchange Commission *Official Summary* edition of December 31, 1935, was the first of a series of periodic reports and was put out when some of the materials were not available. For the purposes of investors those which reported late could be reported in the monthly bulletin of January 1936. Hence the tabulation is probably incomplete because not all of the reports had come in from officers, directors, and principal stockholders.

(2) Not all of the 200 largest nonfinancial corporations were listed in the Securities and Exchange tabulation. Those which had no securities listed on national securities exchanges were not required to report to the Commission. In certain other cases reports were not required, e. g., railroads who filed certain reports with the Interstate Commerce Commission were exempt.

(3) The companies which were required to report were asked to indicate the holdings of all equity securities in the corporation by officers and directors of the corporation and also by any individual or corporation which held more than ten percent of any equity issue. However, if a person filed for any of these reasons he was required to state his complete holdings in the company. It is obvious, then, that if any officers or directors or holders of more than ten percent of any one issue held more than ten percent of the outstanding votes, the above procedure would have detected them. However many persons held more than ten percent of some issue which was, at the date of the report to the Securities and Exchange Commission, without voting power and these, of course, are not tabulated in table V. And, conversely, it is very likely that some persons or corporations held ten percent or less of more than one issue of voting stock and was not an officer or director in the corporation whose equity securities he held. In that case he would have had no reason to report his holdings even though he may have held more than ten percent of the votes that could be cast at the annual meeting.

For these three reasons, table V of chapter IX, above, is not comprehensive.

In some of the cases it was noted in table V of chapter IX that the proportionate interest of the owner in the holdings of an indirect owner were not shown in the

report of the Securities and Exchange Commission. This was permitted explicitly by a ruling of the Commission so that the reports would not disclose the proportion of equity in a partnership or similar association which various individuals held.

The Securities and Exchange Commission also made explicit provision in the rules for reporting holdings of equity securities for cases in which there was doubt as to whether an individual actually owned a certain amount of stock. For example, in the case of a person who has to report for other reasons: he may be a contingent beneficiary of a trust which holds equity securities in the company whose report already includes his name. For this situation a rule was made permitting any person to report without admitting beneficial interest in the securities. The precise legal interpretation of this term is not yet available but it presumably offers protection of some kind to persons not wanting to state that they actually own certain amounts of securities.

# INDEX TO TEXT


A

Accepted Goals:
coordination through, 124
interplay with other organizing influences, 98
Administered Prices:
administration dominated, 110
definition, 109
depression sensitivity of, 137–138
differential behavior of, 146–148
displacing market prices, 145
extent of, 109
goods, 111, 116
labor, 111, 117
relation to administrative controls, 138–139
relation to balanced use of resources, 127
relation to character of market, 110
relation to full use of resources, 127–128
relation to monopoly profits, 139–140
securities, 111, 119–120
Administration:
extent of, 99
interplay with other organizing influences, 98
Administrative Controls Over Prices:
factors underlying, 144–145
relation to depression insensitivity, 143–144
relation to frequency of change, 138–140
significance of, 145–148
Administrative units:
by function, 101–103
determinants of size of, 107
growth of, 106–107
major, 99
Agricultural Prices:
depression sensitivity, 133–134, 137
Agricultural Products:
depression sensitivity of prices of, 133–134
flow to consumer, 40–43
Agriculture:
concentration re market, 116
depression sensitivity of prices, 133–134
employment in, 61, 64–67
employment with full use, 75
exports of products of, 76
income paid out, 82
income produced by, 63
land in farms available for crops, 24
location of persons engaged in, 33
money flows, 81–86
number of farm units, 103
pasture land, 25
trend in unit labor requirements, 74
value of buildings and equipment, 26–27
value of farm property, 25
wealth employed in, 62
Alabama, 39, 44, 49, 58
Arkansas, 39, 97
Automobiles:
consumer expenditure on, 14–15

B

Balanced use of Resources:
price behavior in relation to, 126–127
Bank Credit (See Money)
Bond Prices, 123
Business:
money holdings of, 88
Business Construction, 69–71
Business Corporations:
money flows through, 92–94
Business Inventories:
additions to, 69–70
Buying Power (See Consumer Income):
net government contribution to, 94–95

C

California, 1, 39–40, 43, 46, 51, 53, 55, 57, 59
Canalizing Rules:
coordination through, 120–121
interplay with other organizing influence, 98
Capital Formation:
funds available for, 89, 93
total expenditures on, 95
Capital Goods, 61
Child Labor, 31
Clothing:
consumer expenditure on, 14–15
prices, behavior of, 130
prices, depression sensitivity of, 132
Colorado, 41
Competition, 139n
Concentration:
by industrial segments, 101–103, 106
corporate, 106
government, 103
in market for goods, 111–116
in market for labor, 116–119
in market for securities, 119–120
relative to major markets, 110–120
relative to price insensitivity to depression, 142–143
Connecticut, 51–52, 59
Construction:
employment in, 61, 67
employment with full use, 75.
income paid out, 82
income produced by, 63
money flows, 84, 86
production, 69–70
small enterprises in, 103–104
wealth employed in, 62
Consumer Durable Goods:
consumer expenditure on, 17
effect of changes in size of income on purchase of, 15
effect of income distribution consumer purchase of, 17
effect of level of consumer expenditures on purchase of, 18–19
production of, 18, 69–71
trends of change in purchase of, 20
Consumer Expenditures:
amount, 11–12, 95
by income levels, 9, 11
destination of food dollar, 84
direction of, 11, 17, 84
effect of changes in size of income on, 15, 18
effect of income distribution on, 12–14, 17
effect of prices on, 15
effect of size of income on, 11
effect of volume on direction of, 14–15
index of, 84
Consumer Expenditures—Continued.
money flows involved in, 82
proportionate, 13
trends of change, 15
Consumer Income:
by source, 84
disposal of, 91
distribution of, 6
effect of changes in size on expenditures, 15
effect of distribution on expenditure, 12–14
effect on expenditure, 11, 19
index of, 84
Consumer Organizations, 167–168
Consumer Savings:
by income levels, 9–11, 90–91
in relation to savings of other groups, 89
Consumer Wants:
relation to depression sensitivity of prices, 140–141
trend of change in, 20
Consumers:
effect on industrial location, 36
location of, 6–7, 33
location weighted by purchasing power, 6, 8
money flow to, 81
money holdings of, 88
savings of, 64, 89–90
Consumers' Goods:
consumer expenditure on, 17
effect of change in size of income on purchase of, 15
effect of income distribution on consumer purchase of, 17
effect of level of consumer expenditure on purchase of, 18–19
production of, 18, 69–70
trends of change in purchase of, 20
Continuity:
in techniques, 96
in wants, 96
Control:
of subsidiaries, 104
Controls:
administrative, 138–140
basis of, 155
by corporate community, 158–162
by government, 168–169
by management, 157–158
concept, 153
market, 151
nonmarket, 151–155
over larger corporations, 156–163
separation from ownership, 156–157
structure of, 156–170
through control over investment funds, 159–160
through service enterprises, 159
Coordination:
role of continuity, 96
through accepted goals, 98, 121
through administration, 97, 99–108
through canalizing rules, 97, 120–121
through market mechanism, 97, 108–120
Corporate Community:
controls by, 158–162
Corporate Interest Groups, 160–163

Corporations:
changing importance of largest, 106–107
controls over, 156–162
largest, 99–105
largest nonfinancial, 104–106
wealth controlled by, 105–106
Crude Materials (See Raw Materials)
Customs (See Canalizing Rules)

D

Delaware, 57, 156
Demand Deposits, 88
Depreciation, 92–93
Depression Sensitivity of Prices:
by character of product, 131
by differentiation of product, 136–138
by durability of product, 134, 137, 142–143
by fabrication, 132–133, 135–136
by frequency of price change, 137–138
by industrial segments, 133–134, 137
by tariff protection, 138–139
factors accounting for, 139–145
in relation to administrative controls, 143–144
in relation to concentration, 142–143
relation to consumer wants, 140–141
Depression Sensitivity of Production, 71–73, 141
Differentiated Products:
depression sensitivity of prices of, 136–138
Durable Goods (See also Consumers' Durable Goods, Producers' Durable Goods):
depression sensitivity of employment in, 150–151
depression sensitivity of labor rates for, 150–151
depression sensitivity of prices of, 134, 137, 142–143
Durable Producers' Goods:
production of, 69–71

E

Economic Interest Groups, Formal:
based on business interests, 163–165
based on consumer interests, 167–168
based on farm interests, 167
based on labor interests, 165–167
Education:
consumer expenditure on, 11–15
social expenditure on, 16
Employment:
by industrial segments, 61, 68
by largest manufacturing enterprises, 102.
by size of producing units, 99
depression decline in relation to wage rates, 150–151
estimated at full use, 75
structure of, 27–32
Exports:
value of, 61, 76–78, 84

F

Fabrication:
depression sensitivity of prices by degree of, 132–133, 135–136, 141–142
international trade by degree of, 76–77
price behavior by degree of, 128, 130
Farm Organizations, 167
Farm Property, Value of, 25
Financial Institutions:
directing of money flows by, 84, 92
income paid out, 82
largest, 99, 101
money holdings of, 88
Finished Products:
depression sensitivity of prices of, 133, 135–136, 142
exports of, 76–77
imports of, 76–77
price behavior of, 128, 130
Food:
consumer expenditure on, 11–15
prices, behavior of, 130
prices, depression sensitivity of, 132
Forestry:
depression sensitivity of prices, 133–134
forest and arid woodland, 24
products, 47, 54–55
Full Use of Resources:
estimated employment with, 75
price behavior in relation to, 127–129

G

Gainfully Occupied (See Manpower)
Georgia, 39–15
Goods (See Durable Goods, Semi-Durable Goods, Non-Durable Goods, Services, Consumers' Goods, Producers' Goods):
concentration in market for, 111–116
durable, 15–20, 69–71, 134, 137, 142–143, 150–151
nondurable, 15–20, 56, 69–71, 134–137, 142–143
prices, 122–124
semidurable, 15–20, 69–71, 134–137
services, 17–20, 69–71:
consumers, 15–20, 69–70
prices, 109–110, 116, 122–149
producers, 56, 69–71
Goods Prices:
character of, 116
diverse behavior of, 126–127
relation to labor rates, 124–126
relation to security prices, 126
retail, 122–124
structure of, 126–149
wholesale, 109–110, 123–124
Government:
canalizing controls by, 168–169
concentration re market, 111
income paid out, 82
influence on industrial policies, 169
influence through fiscal policies, 169
money flows, 84, 86, 94–95
money holdings of, 88
largest units, 101, 103
production by, 168
value of buildings and equipment, 26–27
Governmental and Financial Institutions:
employment in, 61, 66–67
employment with full use, 75
income produced by, 63
wealth employed in, 62

H

Health:
consumer expenditure on medical care, 11–15
social expenditure on, 16
Housing:
consumer expenditure on, 11–15, 17
production of, 69–72
value of residential buildings, 26–27, 62

I

Illinois, 39–40, 43, 46, 49–52, 55, 57–58
Immobility:
of labor, 117–118
Imports, 23, 26, 61, 76–78, 84
Income (See Consumer Income, National Income)
Indiana, 46, 50, 52, 57–59
Industrial Areas, 47
Industrial Location:
agriculture, 33
effect of consumer location on, 36, 39–41
effect of resource location on, 36, 38
industrial northeast, 37, 40–41
major areas, 47
manufacturing, 34, 37
mining, 36
shifts of, 56–58
trade, 35
Industrial Migration, 58
Industrial Prices:
depression sensitivity, 133–134, 137
Industry:
depression sensitivity of prices, 133–134
largest corporations, 100–102
value of buildings and equipment, 26–27
Inflexible Prices (See Depression Sensitivity of Prices)
Interest:
rates, 121, 151
Interlocking Directorates, 158
International Trade (See Imports, Exports)
Iron and Steel, 44, 48–53:
industrial flow, 67
industrial migration, 58

K

Kansas, 43

L

Labor:
child, 31
concentration in market for, 116–119
immobility of, 117–118
organizations, 118, 165, 167
rates, 111, 117, 122–126, 149–151
supply, 27–30, 32, 64–65, 74
written agreements, 119
Labor Agreements:
written, 119
Labor Organizations:
workers in, 118
Labor Rates:
behavior in depression and recovery, 149–151
character of, 117
depression decline in employment in relation to, 150–151
relation to goods prices, 124–126
relation to security price, 126
Labor Supply (See Manpower)
Labor Unions, 165, 167
Laws (See Canalizing Rules)
Louisiana, 54

M

Maine 1, 54, 58
Management:
controls by, 157–158
Manpower:
according to skills, 29
by occupational groups, 64–65
distribution by age and sex, 28
effect of income on, 28–29
labor supply by sex and age groups, 28–29
total supply, 27–32
trend of change in, 30
trends in unit requirements of, 74
Manufacturing:
concentration re market, 111–116
employment in, 61, 64–67
employment with full use, 75
exports of, 76
income paid out, 82
income produced by, 63
large coporations in, 102, 106
location of persons engaged in, 34, 37
money flows, 84, 86
trend of unit labor requirements, 74
wealth employed in, 62
Market Controls, 154

Market Coordination:
characteristics of, 108–110
extent of, 108
Market Mechanism:
interplay with other organizing influences' 98
role of, 108
Market Prices:
definition, 109
depression sensitivity of, 137–138
differential behavior of, 146–148
displacing by administered prices, 145
extent of, 109
goods, 111, 116
labor, 111, 117
market dominated, 110
relation to character of market, 110
securities, 111, 119, 120
Markets:
character of, 110
concentration in goods, 111–116
concentration in labor, 116–119
concentration in relation to, 110
concentration in security, 119–120
effect of collusion on, 145
effect of size of enterprise on, 144–145
narrowing down of, 144–145
Maryland, 53
Massachusetts, 40, 43–44, 52–55, 57–58
Mechanization, 73–74
Michigan, 40, 44, 50–52, 54, 56–58
Minerals (See also Mining):
employment, 61
employment with full use, 75
exports of, 76
imports of, 26
income paid out, 82
income produced by, 63
production of, 26
wealth employed in, 62
Mining (See also Minerals):
concentration re market, 116
depression sensitivity of prices, 133–134
employment in, 66–67
large corporations in, 103
location of persons engaged in, 36
money flows, 84, 86
trends in unit labor requirements, 74
Minnesota, 43–44
Mississippi, 39, 58
Missouri, 43, 46, 58
Money:
balances, 88–89
coordinating role of, 108
definition, 87*n*
flows, 79–86
supply of, 86–88
Money Flows:
between producers, 84–85
directing of, 89–95
factors associated with, 85
involved in disposal of consumer income, 83–84
major types, 79
through business corporations, 92–94
through financial institutions, 92
through government, 94–95
to consumers as income, 81–82, 84
Money Transactions, 108–109
Monopoly, 139n
Monopoly Profits:
relation to administered prices, 139–140

N

National Income:
by industrial segments, 63
by source, 81–83
loss in potential, 2
Natural Resources (See Mining, Minerals):
arable land, 24
effect on industrial location, 36
Natural Resources—Continued.
forest, 24
pasture land, 25
richness of, 23
value of farm property, 25
Nevada, 156
New Jersey, 46, 53, 59
New Mexico, 156
New York, 1, 39–41, 43, 46, 49–55, 57–59, 103
Nondurable Goods:
consumer expenditure on, 17
depression sensitivity of prices of, 134, 137, 142–143
effect of changes in size of income on purchases of, 15
effect of income distribution on consumer purchase of, 17
effect of level of consumer expenditure on purchase of, 18–19
growth relative to durable, 56
production of, 18, 69–71
trends of change in purchase of, 20
North Carolina, 41, 45, 57–58

O

Ohio, 40, 49–52, 55, 57–59, 103
Old Age:
employment opportunities, 31
proportion in population, 30
Organizations:
labor, 118
Organizing Influences:
complex play of, 98
Ownership:
separation from controls, 156–157

P

Pennsylvania, 39–40, 43, 46, 49–51, 53, 55, 57–59, 103
Physical Environment, 22, 32
Plant:
value of, 26–27
Policy Formation:
management in relation to, 157–158
Population (See Consumers)
Potential Production, 2, 75
Power, 153n
Price Behavior:
by character of product, 128–130
by degree of fabrication, 128–130
by durability of product, 128–130
by frequency of price change, 128–129
in depression and recovery, 129–145
wholesale, 128–130
Prices:
administered, 109
character of, 109–110
coordination through flexibility of, 109
depression sensitivity by:
character of product, 131
degree of fabrication, 132–133, 135–136
degree of tariff protection, 138–139
differentiation of product, 136–138
durability of product, 134, 137
frequency of price change, 137–138
industrial segments, 133–134, 137
effect on consumer expenditures, 15
functions of flexibility of, 126–127
goods, 111, 116
interest rates, 122, 151
labor rates, 111, 117, 122
market, 109
relation to balanced use of resources, 126–127
relation to full use of resources, 127–129
retail, 122–124
security, 111, 119–121
sensitivity to depression, 129–145
Prices—Continued.
sensitivity to recovery, 129–145
wholesale, 109
Producers:
money flows between, 84
number of units, 99
Producers' Goods:
growth relative to consumers' goods, 56
production of, 69–70
Production:
behavior in relation to price behavior, 140–141
by durability, 69
of consumption goods by degree of durability, 18
potential, 75
relation of administrative controls to behavior of, 148
total national, 60
value of, 61
Public Works:
production of, 69–71

R

Railroads (See also Transportation):
employment on, 68
largest, 100–101
trend in unit labor requirements, 74
Raw Materials:
depression sensitivity of prices of, 133, 135–136, 141–142
exports of, 76–77
imports of, 76–77
price behavior of, 128, 130
Recreation:
consumer expenditure on, 11–15
social expenditure on, 16
Regulations (See Canalizing Rules)
Residential Buildings (See Housing)
Resources:
balanced use of, 126–127
failure to use effectively, 2–3
full use of, 75, 127–129
institutions, 22, 32
manpower, 22, 27–32
natural, 22, 23–26
physical environment, 22, 32
plant, 22, 26–27
techniques of production, 22, 32
Retail Prices:
relation to labor rates, 124–126
relation to security prices, 126
relation to wholesale prices, 124
Rhode Island, 53, 57
Rules (See Canalizing Rules)

S

Salary Rates (See also Labor Rates), 123–124
Savings:
by consumers, 9–11, 89–90
by corporations, 93
by financial institutions, 92
by unincorporated business enterprise, 94
Securities:
concentration in market for, 119–120
Security issues:
funds derived from, 93–94
Security Prices:
character of, 119–120, 122–124
depression behavior, 151–152
relation to other prices, 126
Semi-Durable Goods:
consumer expenditure on, 17
depression sensitivity of prices of, 134, 137
effect of changes in size of income on purchase of, 15
effect of income distribution on consumer purchase of, 17

Semi-Durable Goods—Continued.
production of, 18, 69–71
trends of change in purchase of, 20
Semi-Finished Products:
depression sensitivity of prices of, 133, 135–136, 142
exports of, 76–77
imports of, 76–77
price behavior of, 128, 130
Services:
consumer expenditure on, 17
effect of changes in size of income on purchase of, 18
effect of income distribution on consumer purchase of, 17
effect of level of consumer expenditure on purchase of, 18–19
production of, 18, 69–71
trend of change in purchase of, 20
Services to the Consumer:
concentration re market, 116
employment in, 61, 66–67
employment with full use, 75
income paid out, 82
income produced by, 63
large corporations in, 103
money flows, 84, 86
small enterprises in, 103
wealth employed in, 62
Small Enterprises:
fields of, 103
Social Expenditure, 16
Social Institutions, 22–32
South Carolina, 45
Standard Products:
depression sensitivity of price of, 136–138
Stockholders:
intercorporate, 158–159
separation from major controls, 156–157
Stock Prices, 123

T

Tariffs:
depression sensitivity of prices by degree of tariff protection, 138–139
Taxes:
personal, 91
Technology:
as a resource, 22, 32
distribution of gains from, 125
Technology—Continued.
reduced cost from improved, 124
trends in, 73–74
Telephone Communication:
employment in, 68
trend in unit labor requirements, 74
Tennessee, 41, 57–58
Texas, 1, 39–40, 43, 57
Textiles, 44–46
Threads of Control (See Controls)
Trade:
concentration re market, 116
employment with full use, 75
income paid out, 82
income produced by, 63
international, 23, 26, 61, 76–78, 84
large corporations in, 103
location of persons engaged in, 35
manpower employed in, 61, 66–67
money flows, 84–86
small enterprises in, 103
wealth employed in, 62
Trade Associations, 164–165
Transportation:
consumer expenditure on, 11, 15
flow of freight traffic, 37–38
largest corporations in, 106
largest railroad corporations, 100
social expenditures on highways, 16
trend in unit labor requirements, 74
Trends of Change:
in consumer expenditure, 15
in employment, 64, 66
in labor supply, 30
in production, 71
in technology, 73–74

U

Unemployment, 61
Unique Products:
depression sensitivity of prices of, 136–138
Utilities:
concentration re market, 111
employment in, 61, 66–67
employment with full use, 75
income paid out, 82
income produced by, 63
index of rates, 145–146
large corporations in, 100–101, 106
Utilities—Continued.
money flows, 84, 86
wealth employed in, 62

V

Value Added in Manufacture:
by largest enterprises, 102
Value of Manufactured Products:
by largest enterprises, 102
Vermont, 156
Virginia, 41

W

Wage Rates (See also Labor Rates), 123–124
Washington, 54
Wealth:
buildings and equipment, 26
agricultural, 26–27
governmental, 26–27
industrial, 26–27
residential, 26–27, 62
by industries, 62
proportion controlled by large corporations, 106
value of, 62
West Virginia, 57, 117
Wholesale Prices:
behavior of, 128–130
by character of product, 131
by degree of fabrication, 132–133, 135–136
by degree of tariff protection, 138–139
by differentation of product, 136–138
by durability of product, 134, 137
by frequency of price change, 137–138
by industrial segments, 133–134, 137
depression sensitivity of, 129–145
effect of administrative controls in behavior of, 146–148
frequency of price change, 109–110, 123–124
relation to retail prices, 124
Wisconsin, 52, 54, 57–58
Workers:
in labor organizations, 118
Written Agreements:
business—labor, 119
Wyoming, 156